TRANSACTIONS

OF THE

WISCONSIN

STATE AGRICULTURAL SOCIETY,

WITH

REPORTS OF COUNTY SOCIETIES,

AND KINDRED ASSOCIATIONS.

VOL. V.—1858-'59.

EDITED BY J. W. HOYT, SECRETARY.

MADISON, WIS.:
CARPENTER & HYER, PRINTERS, PATRIOT OFFICE.
1860.

FROM
J. W. HOYT,
SECRETARY
WISCONSIN STATE AGRICULTURAL SOCIETY,
MADISON.

JH

Annual Address

Hon. Abram Tuncopi

pp. 287-299

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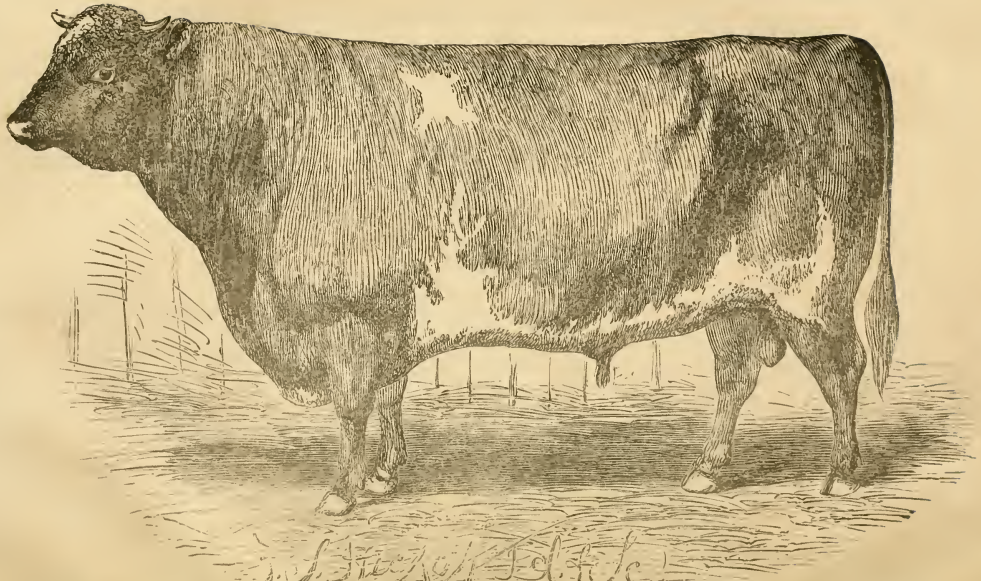

PARIS.—Durham—Owned by C. H. WILLIAMS, Excelsior, Sauk County. First Prize at State Fair of 1858. See page 63.

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PREFACE.

The Fifth Volume of the Transactions of the Wisconsin State Agricultural Society is offered to the public in the belief, that it contains a large amount of valuable matter, and that it will be read with pleasure and profit by the friends of Industry, irrespective of class or profession.

The objects kept in view, in its preparation, have been, first, to present as complete a record as possible of the history of the industrial arts and scientific investigations in Wisconsin, for the period embraced within the years 1858–9; secondly, to furnish the best practical information, available, on subjects of importance connected with Agriculture, Horticulture, and the Mechanic and Household Arts; and thirdly, to stimulate all who are engaged in these pursuits to renewed and more earnest effort for their elevation and advancement.

No little embarrassment has grown out of the necessity to incorporate the Transactions of two years in one volume—not only because absolute accuracy, in many particulars, is hardly possible after a considerable lapse of time, but likewise for the reason that the difficulty in properly arranging the contents of the work is thereby increased, and that a larger proportion of relatively unimportant particulars must be embraced, to the exclusion of matter possessed of greater general interest.

It is also an occasion of regret to the editor, that circumstances have seemed to require so rapid an execution of the work—much of the material having been collected and prepared, and the whole volume crowded through the press within the period of thirty-five days—that he can hardly hope to find it free from some annoying typographical errors, and many of a less important character. He has the consciousness, however, of having faithfully and unremittingly devoted himself to the work, and would, therefore, bespeak a generous leniency of judgment from those most directly interested, as also from the critical and professional reader. It is the intention of the present Board to re-establish the policy of publishing the Transactions of the Society *annually*, and thus the above-mentioned difficulties will no longer lie in the way of making the publication worthy, in every respect, of the cause it represents.

The order of subjects adopted—with one or two exceptions, arising from the haste of compilation—is such as appeared logical and convenient. The Transactions proper are chronologically arranged, so as to present a connected history of the Society for the period for which they are published.

The reports of Awarding Committees have, many of them, been gathered up from scattering remarks in the class books used at the Fairs, and if any of them shall be found to bear a shade of meaning which the Judges would not have sanctioned, we hope they will be provoked to the making of such a report, when again it shall become their duty, as may be published without editorial modification. Mere bald statements of awards of premiums, unaccompanied by reasons therefor, are alike

unsatisfactory and unprofitable; whereas, a report embracing such reasons, and, perhaps, also, a carefully prepared discussion of the general subject involved, would constitute a valuable paper for study and preservation, and at the same time confer an honor upon the author as enduring as the records of the Society. May we not hope that many such reports will be furnished for the volume of Transactions for 1860?

The Reports of the County Societies are equally faulty. The law does not require, as a *sine qua non*, a concise, general exhibit of the condition of the agriculture of the counties of the State, and hence no such statement is furnished; but who does not see that reports of this character would exert a highly beneficial influence upon the counties themselves, and that the volume which should contain those reports would be a storehouse of information on the industrial condition and progress of the State? The Abstracts of Reports for 1859 are necessarily brief, because of the unexpectedly large amount of matter furnished by the Fruit Growers' Association, the great importance and practical value of which, will, however, more than justify the appropriation thereto of so large a share of space.

Of the Essays, Addresses, and Communications, which enrich and embellish this volume, there are many things we would be glad to say, did space permit a special notice; as it is, we content ourself with the statement, that they have been furnished by some of the ablest practical and scientific men in our country, are eminently worthy of a careful perusal, and justly entitle their authors to the gratitude of the Society and the friends of agricultural advancement generally. Several papers of

value—including one on Fruit Growing in Wisconsin, by J. C. Plumb, Esq., and one on Grape Culture, by P. Kehl, Esq.,—have been necessarily postponed, in their publication, until the issue of the next volume. The interesting Address on Agricultural Education, delivered at Madison, by Chancellor Barnard, during the week of the fair of 1858, is also omitted because of a lack of time on the part of the author, to prepare it for publication.

In explanation of the non-appearance of the agricultural statistics, reported by the Secretary of State for 1858–9, it is proper to state, that a paper thereon, from one of the Ex-Presidents of the Society, was confidently expected up to so late a period in the printing of the work, that we were unable to prepare a worthy substitute, without delaying the press.

In relation to the mechanical execution of this volume, we have pleasure in being able to say, that it compares favorably with works of a similar character published in even the older States. In the midst of the pressing demands of a large amount of State work, the efficient gentlemen who have had the printing of the Transactions in charge, have so faithfully and promptly fulfilled the obligations assumed, that we are enabled, thus early, to send forth a work of which the Society may justly be proud.

J. W. H.

State Agricultural Rooms,
Madison, March 29, 1860.

INDEX.

Abstract of County Reports, ... 174, 442
Address, Hon. J. F. Willard Opening, at State Fair, 1858, ... 45
Hon. C. M. Clay, Annual, at State Fair, 1858, ... 51
Hon. Abram Lincoln, Annual, at State Fair, 1859, ... 287
Hon. J. P. McGregor, at Columbia County Fair, 1858, ... 116
Henry S. Magoon, Esq., at La Fayette County Fair, 1858, ... 127
Hon. Thomas P. Turner, at Waukesha County Fair, 1858 134
J. W. Hoyt, at Whitewater Horse Show, 1858, ... 153
Hon. L. P. Harvey, at Jefferson and Kenosha County Fairs, 1858, 1859, ... 426
D. S. Curtiss, Esq., at Dodge County Fair, 1859, ... 435
Additions to the Flora of Wisconsin, T. J. Hale and I. A. Lapham, ... 417
African and Chinese Sugar Cane, Essay, J. G. Knapp, ... 350
Agriculture, improvement in, ... 134
Annual Election of Officers of Society, ... 115, 233
Fair of 1858, general account of, ... 44
1859, general account of, ... 230
meeting of Society, 1858, Proceedings, ... 114
Fruit Growers' Association, ... 463
Report of Executive Committee for 1858, ... 31
financial affairs of Society for 1859, ... 286
Apple, the, in Premium Essay, ... 328
Apples, Descriptive List of, ... 537
how to preserve, ... 259
list of, for Wisconsin Orchard, ... 496
Seedlings, and other fruits, ... 511
varieties, &c., description of, ... 474
new Seedling, "Wauwatosa," 252
varieties for Summer, Autumn and Winter, ... 474, 475, 477
Awards and Report on, ... 77, 251
Apple Butter, Statement of William Peffer, ... 85
Associations for the improvement of Horses, ... 172
Awards of Premiums at State Fair of 1858, ... 62
on Cattle, ... 62
Horses, ... 66
Sheep, ... 69
Swine, ... 71
Poultry, ... 73
Field Crops by the acre, ... 74
Farm Products and Garden Vegetables 74
Fruits, ... 77
Flowers, ... 80
Dairy and Household Products, ... 81
Delicacies, ... 84
Farming Implements, ... 85
Operative Machinery, ... 87
Domestic Manufactures, ... 88
Textile Fabrics, Clothing, &c., ... 89

Awards of Premiums on Printing and Binding, ... 90
Cabinet Ware, ... 91
Leather, ... 91
Boots and Shoes, ... 91
India Rubber Goods, ... 91
Carriages, ... 92
Stoves, ... 92
Furniture, ... 92
Silver-Ware, ... 92
Ornamental, Shell, and Wax Work, ... 93
Millinery, ... 94
Fine Arts, ... 94
Articles in Discretionary Department, ... 95
Plowing, ... 103
Ladies' Equestrianism, ... 110
Awards of Premiums at State Fair of 1859, ... 235
on Cattle, ... 235
Horses, ... 239
Sheep, ... 242
Swine, ... 244
Poultry, ... 245
Field Crops, by the acre, ... 246
Farm Products, ... 248
Garden Vegetables, ... 249
Fruits, ... 250
Wisconsin Wines, ... 253
Flowers, ... 254
Dairy and Household Products, ... 256
Delicacies, ... 259
Sugar and Syrup Manufacture, ... 260
Farming Implements, ... 263
Operative Machinery, ... 264
Carriages, ... 266
Stoves, ... 267
Furniture, ... 267
Cooperage, Basket-Ware, &c., ... 267
Cabinet Ware, ... 267
Leather, Boots and Shoes, &c., ... 268
Textile Fabrics, Clothing, &c., ... 268
Silver-Ware, Cutlery and Britannia, ... 269
Lighting Apparatus, ... 269
Domestic Manufactures, ... 269
Millinery, ... 271
Ornamental Needle and Shell Work, ... 272
Printing and Bookbinking, ... 273
Musical Instruments, ... 274
Works of Art, ... 274
Articles in Miscellaneous Department, ... 277
Discretionary Department, ... 279
Plowing, ... 281
Ladies' Equestrianism, ... 282

Baga, Ruta, ... 319
Bark Louse, the Discussion on 469
Borer, the Discussion on, ... 471
Breeding of Horses, physiological 168
Butter, Premium, Statements concerning 82
By-Laws of Ex. Committee of State Agricultural Society, ... 21

Catalogue of Wisconsin Plants, additions to, ... 417
Champagne from Gooseberries, ... 553

Cheese, premium, statement concerning, ... 834, 257
Cherry, the, ... 339, 494, 500, 536
Chinese and African Sugar Cane, ... 350
Syrup, manufacture of, ... 261, 412
Committee, Executive Meetings of 39, 1d1, 221, 328
Report of, for 1858, ... 31
Constitution of State Agricultural Society 17
Communication on the Penokee Iron Range, by I. A. Lapham, ... 391
Lumber Trade in Green Bay, Hon C. D. Robinson, ... 401
Fruit Growing, Drainage in Brown County, J. W. Cotton, ... 406
Experience with Sorghum and Imphee, J. C. Plumb, ... 409
The Hubbard Squash, Dr Chas. Jewett, ... 415
Additions to the Flora of Wisconsin, T. J. Hale, ... 417
Suggestions to the Fruit Growers of Wisconsin, Prof. J P. Kirtland, ... 482
Pears, Dr. McVickar, ... 489
Experience with Fruit in Wisconsin, ... 492
List of Apples for a Wisconsin Orchard, J. C. Brayton, ... 496
List of Apples for a Farm of 80 to 100acres, J. J. Thomas, 497
Fruits, tender and hardy varieties, T. W. Loudon, ... 499
Orchard Planting and Culture, John Tinker 502
Raising and Planting of Evergreens, Saml. Edwards, ... 506
Transplanting Evergreens, A. G. Hanford, ... 509
D. Mathews, ... 510
Seedling Apples and other Fruits, Col. G. de Nevue, ... 511
Tho Seedling Apples at State Fair of 1858, L. T Pennington, ... 513
Remarks on Winter Pears, ... 515
Cultivation of the Plum on wild stock, Jno. G. Kanouse, 519
Planting and Pruning Orchard Trees, D. Matthews, ... 520
Effects on Fruit Trees, of the winter of 1856–7, Francis Drake, ... 522
Topics of interest to Fruit Growers, John Townley 523
Descriptive List of Fruits, A. Van Vleck, ... 535
Descriptive Notes on Apples O. S. Willey, ... 537
Culture of Grapes, — Russell, ... 548
Grape Culture, S. Shepherd, ... 544
List of Apples, &c., — Congar, ... 550
Remarks on Fruits, ... 551
Cutting Bark of Apple trees, — Straight, ... 552
Excessive Cultivation of Fruit Trees P. P. Doro, ... 542
Champaigne from the Gooseberry, F. W. Loudon, ... 553
Abstract of Correspondence 554
Culture of the Farmer, ... 425
Fruit in Wisconsin, ... 327
excessive, ... 542
Grape, ... 544, 548
Currant, the, ... 345, 501
Cutting the bark of Apple trees, ... 552

Essay, Premium, on General Farm Management, Jno. Edwards, ... 300
Fruit Culture in Wisconsin 327
Chinese and African Sugar Cane, Judge J. C. Knapp, ... 350
Seeding the soil, J. W. Hoyt, ... 377
Evergreens, transplanting of, ... 509

Farm Management, premium Essay on, ... 300
Address, ... 426
Farming, profit and honor in, Address, ... 435
Fruit Growers' Association, Report of, ... 463
Fruit-Growers, suggestions to, ... 482

Fruit, varieties of, Discussion,..... 474
Topics of interest to,..... 223
Fruit, experience with, in Wisconsin,..... 492
Fruits, list of, for farm of 80 to 100 acres,..... 497
tender and hardy varieties,..... 497
descriptive list of,.....
remarks on,..... 451
how to preserve,..... 259
Fruit-trees, excessive cultivation of,..... 542

Grape, the,..... 340
culture of,..... 544, 548
Gooseberry, the, Champagne from,..... 553

Horse, the, and Associations for the improvement of,..... 153
Horse-Show at Whitewater, Report of,..... 214

Legislative enactments relating to Agricultural Societies 11, 16
Lumber Trade in Green Bay,..... 401

Pear, the,..... 336
Pears,..... 489, 492, 500, 504, 536
Winter, Remarks on,..... 515
Penokee Iron Range, with map,..... 391
Plum, the,..... 338, 500, 504, 536
cultivation of, on the wild stock,..... 519
Plants, number of, that can be grown on an acre,..... 485
Planting out of Fruit-trees,..... 332
an Orchard,..... 502
Evergreens,..... 506
and pruning Orchard Trees,..... 520

Report of Executive Committee for 1858,..... 31,-7
Wisconsin Fruit Growers' Association,.....463, 564
Whitewater Horse Show,..... 214
Reports and Awards of Premiums at Fair of 1858,.....62, 110
1859,.....235, 282
Reports of County Agricultural Societies for 1858, alphabetically arranged,.....174, 218
for 1859,..... ..442, 462

Science must enlighten and relieve Labor,..... 433
Seeding the Soil,..... 377
Soil and Site for an Orchard,..... 464
Statement of Fiscal Affairs of State Agricultural Society, for 1858,..... 38
for 1829,..... 286
Statements concerning Premium articles and animals exhibited at the Fairs of 1858-9, will be found in connection with the Reports of the Committees on the several classes in which they were entered.
Strawberry, the,..... 346, 501, 505
Synopsis of Entries at Fairs of '58-9,..... .....61, 234

Transplanting of Trees, age for,..... 554

LEGISLATIVE ENACTMENTS.

OF THE STATE AGRICULTURAL SOCIETY.

[Chapter 80 of Revised Statutes.]

Section 1. The Wisconsin State Agricultural Society is hereby declared a body politic and corporate, and by that name it shall be known in all courts and places whatsoever.

Sec. 2. The objects of the Society being to promote and improve the condition of agriculture, horticulture, and the mechanical, manufacturing, and household arts, it shall be allowed, for those purposes only, to take, hold, and convey real and personal estate; the former not exceeding in value ten thousand dollars.

Sec. 3. The said corporation shall possess all the powers and privileges conferred, and be subject to all the liabilities imposed upon corporations by chapter seventy-eight of the revised statutes, so far as the same may be applicable.

Sec. 4. There is hereby annually appropriated, until the legislature shall by law otherwise direct, to the Wisconsin State Agricultural Society, the sum of three thousand dollars, to be expended by said Society in such manner as it may deem best calculated to promote and improve the condition of agriculture, horticulture, and the mechanical, manufacturing, and household arts in this State, either for the payment of premiums at the annual cattle shows and fairs of the Society; or in the purchase and distribution of choice seeds, cuttings, plants, or tubers, which have been tested and found adapted to the soil and climate of this State; or in the prosecution of scientific investigations and experiments, and the collection and diffusion of information, tending to develope the natural and agricultural resources of Wisconsin: *provided*, that no part of the sums of money hereby appropriated shall be applied, either directly or indirectly, to the payment of any salaries or fees of any of the officers of the Society.

Sec. 5. It shall be the duty of the Executive Committee of the said Wisconsin State Agricultural Society to keep an accurate account of the manner of expenditure of the said sums of money hereby appropriated, and transmit

the same, together with the vouchers therefor, to the Governor of this State, in the month of January in each year, to be by him laid before the legislature.

SEC. 6. It shall be the duty of the said Executive Committee of the Wisconsin State Agricultural Society to collect, arrange, and collate all the information in their power in relation to the nature, origin, and preparation of soils; the cultivation and growth of crops; the breeding and management of stock; the application and character of manures and fertilizers; the introduction of new cereal and other grains; and other agricultural subjects; and report the same, together with a statement of their own proceedings, to the Governor of the State, in the month of January in each year, to be by him laid before the legislature.

SEC. 7. The sums of money hereby appropriated shall be paid to the Treasurer of said Society, in the month of March in each year, upon the order of the President and Secretary of said Society: *provided*, that if this chapter shall be repealed prior to the payment of such sum of money in any year, then said Society shall not be entitled to the appropriation herein named on the year of such repeal.

OF COUNTY AGRICULTURAL SOCIETIES.

SEC. 8. It shall be lawful for any number of persons, in any county in this State, to associate together and form a County Society, to encourage and promote agriculture, domestic manufactures, and the mechanic arts therein; and any such society, when organized according to the provisions of this chapter, shall have all the power of a corporation or body politic, and may sue and be sued, implead and be impleaded, prosecute and defend to final judgment and execution, in any court having jurisdiction; and may purchase and hold all the real and personal estate which shall be necessary to best promote the objects of such association, and which estate shall be exclusively devoted to such object.

SEC. 9. Such Societies shall be formed by written articles of association, subscribed by the members thereof, specifying the objects of the Society, and the conditions on which subscribers shall become members thereof; and the first meeting shall be notified and held in the manner prescribed in the articles of association. They may adopt a corporate name, either in the original articles of association, or by vote at the first meeting thereof, in which such Society shall be organized; and may at any meeting adopt a corporate seal, and alter the same at pleasure.

SEC. 10. Such Societies, not exceeding one in each county, shall be organized by appointing a President, Vice President, Secretary, and Treasurer, and such other officers as they may deem proper, to be chosen annually, and to hold their places until others are appointed.

SEC. 11. When any such Societies are organized as aforesaid, they shall have power to adopt all such by-laws, rules, and regulations as they shall judge necessary and expedient to promote the objects thereof, not inconsistent with the constitution and laws of this State.

SEC. 12. It shall be the duty of the Secretary of every such Society to keep correct records of all the proceedings of the same, in a book provided for that purpose; and such records may be read in evidence, in any court, where the interests of such Society are concerned.

SEC. 13. When it shall be made to appear, to the satisfaction of the Secretary of State, that any such Society is duly organized in any county, according to the provisions of this chapter, it shall be the duty of the said Secretary of State to issue an order to the State Treasurer to pay annually to the Treasurer of any such Society so organized as aforesaid, on application made therefor, the sum of one hundred dollars: *provided*, *nevertheless*, that no such Society shall draw any money out of the treasury of this State, as aforesaid, in any year, until it shall also be further made to appear to the satisfaction of the Secretary of State, that there shall have been subscribed and paid into the treasury of such Society, for the sole use and benefit thereof, for the year in question, a sum not less than one hundred dollars.

SEC. 14. All moneys so subscribed or received from the State as aforesaid shall, after paying the necessary incidental expenses of such Societies respectively, be annually paid out for premiums awarded by such Societies, in such sums and in such way and manner as they severally, under their by-laws, rules, and regulations, shall direct, on such live animals, articles of production, and agricultural implements and tools, domestic manufactures, mechanical improvements, and productions, as are of the growth and manufacture of the county; and also all such experiments and discoveries or attainments in scientific or practical agriculture as are made within the county where such Societies are respectively organized.

SEC. 15. Each County Agricultural Society entitled to receive money from the State treasury shall, through its Treasurer, transmit to the Treasurer of the State, on or before the fifteenth day of January in each year, a statement of the money received from the State, together with the amount from the members of said Society for the preceding year, a statement of the expenditures of all such sums, and the number of the members of said Society.

SEC. 16. Each County Agricultual Society receiving money from the State as aforesaid shall publish, in the month of October or November in each year, at their own expense, a statement of the experiments and improvements, and reports of their committees, in one or more newspapers in the county where such Society is located, or in an adjoining county, when no paper is published in the county where such Society is located; and evidence that the requirements of this chapter have been complied with shall be furnished to the State Treasurer, before he shall pay over to any county Society the sum appropriated by the State for the benefit of said Society.

SEC. 17. Live animals, the growth of any foreign State or county, which have been owned and kept in any county in this State for the term of six months previous to its annual agricultural fair, are hereby placed on the same footing, and may receive the same premiums thereon, as live animals which are the growth of such county.

SEC. 18. There is hereby appropriated, annually, out of any money in the treasury not otherwise appropriated, the sum of one hundred dollars to each County Society which shall be organized under the provisions of this chapter.

SEC. 19. The County Board of Supervisors of the different counties of this State are hereby authorized to levy a tax upon the taxable property of their respective counties annually, not exceeding the sum of four hundred dollars in any one year, for the purpose of encouraging and promoting agriculture and the mechanic arts.

SEC. 20. Said tax shall be levied and collected in the same manner as other taxes are, and when collected shall be paid over to the treaaurer of the Agricultural Society of said county on his application for the same.

SEC. 21. All money so received from the county shall be expended under the directions of the proper officers in the purchase of suitable grounds, erecting buildings, fencing, and improving the same for the use of said society, and for the purposes specified in section fourteen of this chapter.

CHAPTER 53, ACTS OF A GENERAL NATURE OF 1858.

As amended February 15th, 1859.

SECTION 1. In all cases when the citizens of a county, or of two counties jointly, shall or may have organized a County Agricultural Society, not exceeding one in each county, by the adoption of a constitution and the choice of the ordinary officers, they shall have all the power of a corporation and body politic, and may sue and be sued, plead and be impleaded, prosecute and defend, to final judgment and execution in any court of law or equity, and may purchase and hold any real and personal estate which shall be necessary to best promote the objects of such association, and which estate shall be exclusively devoted to such objects. Said Societies shall also have power to sell and convey any and all such real estate, said conveyance being executed by the President and Secretary of such Society. All such land and property shall be free from taxation while used as aforesaid by such Societies.

SEC. 2. All such Societies shall be open and free alike to all the citizens of of a county who may wish to become members thereof, and shall comply with the regulations and pay the prescribed fees. They shall hold annual elections for the election of their officers, and the same shall be duly notified by publication of notice in some newspaper of the county, or some county adjoining, in the absence of any in the proper county. They may adopt such by-laws as may be required to carry out the purposes of the Society, and may adopt a corporate seal and change the same at pleasure. Their records shall be carefully kept by their Secretary, and may be read in evidence in any court when the interests of such Society are concerned.

SEC. 3. The principal officers of such Societies, and also of the State Agricultural Society, shall have full jurisdiction and control of the grounds on

which the Society may exhibit, and of all the streets, and alleys, and other grounds adjacent to the same, during all such exhibitions, so far as may be necessary to preserve and keep good order, and so far as may be necessary to exclude therefrom all other exhibitions, booths, stands, or other temporary places for the retail or sale of any kind of spirituous or fermented liquors, or other article or articles that they might deem objectionable or offensive to said exhibition. The President of any such Society, or in his absence, any Vice-President acting in his stead, shall have the power to appoint any necessary policemen to assist in preserving the peace, quelling any disturbance or arresting offenders and conveying them to jail for trial; and all such policemen thus appointed shall be vested during the continuance of such exhibition with the ordinary powers and authority of common constables, and be entitled to similar fees for any services rendered or duty performed. Any person or persons who willfully, and without leave, enter any fair ground during an exhibition, that are duly enclosed with a proper fence not less than six feet high, either by climbing over, under, or through said fence, or by fraudulently receiving and using the tickets or badge of another, or by passing the gate-keepers without the proper payment and compliance with the rules of said grounds, shall be deemed guilty of a misdemeanor, and upon conviction thereof before any court, shall be liable to a fine of not less than five nor more than twenty-five dollars; and, in case of non-payment, to imprisonment in the county jail not less than one nor more than ten days. Any such offender may be tried before any justice of the peace or police justice, most convenient to be found.

Sec. 4. That all properly organized County Agricultural Societies as aforesaid, shall be entitled to an annual appropriation of one hundred dollars each from the State treasury; *Provided*, They have complied with the following conditions:—1st. That they have held an annual fair or exhibition during the year in question.—2d. That an amount of not less than one hundred dollars has been received by said Society during the year by the sale of memberships and admission tickets, subscriptions, &c., and bona fidely paid into their treasury in cash.—3d. That they have, through their Executive Committee or Secretary, made up and published in some newspaper in the county, or county adjacent, a condensed report of their principal acts and doings for the year, setting forth their official organization, their principal meetings, a report of their fair, showing the number of entries, the amount of money received and from what source, together with the amount paid out for premiums and for other purposes. Also a full statement of the entire receipts and disbursements of the Society for the year, showing from whence all sums were received, and to whom paid, and the correctness of the same verified by the oath of the Secretary, two certified copies of which report to be deposited, the one with the Secretary of State, and the other with the Secretary of the State Agricultural Society, by the thirty-first day of December in each year.

Sec. 5. It shall be the duty of the Secretary of State, within ten days after the said thirty-first day of December, to issue an order upon the State Treas-

urer directing the payment of the said sum of one hundred dollars to or on the order of the Treasurer of each Society, that has substantially complied with the requirements of this Act. And the aforesaid sums are respectively and permanently appropriated to the Societies aforesaid, and it shall be the duty of the State Treasurer to pay the same on demand, out of any moneys in the treasury not otherwise appropriated.

SEC. 6. All County Agricultural Societies that were properly organized for the years of 1856 or 1857, and held fairs and realized the amount of money into their treasuries required by Section 4 of this Act, shall be entitled to the aforesaid annual appropriation of one hundred dollars for either or both of said years for which they have been thus organized and thus complied. And on satisfactory proof being furnished the Secretary of State of the fact of the organization and of the receipt of the requisite amount of money, as aforesaid, it shall be the duty of the Secretary of State to issue orders on the State Treasurer for the payment of all such appropriations, and it shall be the duty of the State Treasurer to pay the same.

SEC. 7. There is hereby appropriated annually out of any money in the treasury not otherwise appropriated, the sum of one hundred dollars to each County Agricultural Society, that is or may be entitled thereto under the provisions of this Act.

SEC. 8. So much of any former Act as appropriates money to County Agricultural Societies is hereby repealed.

SEC. 9. This Act shall be in force from and after its passage.

Approved April 19th, 1858.

CONSTITUTION OF THE SOCIETY,

As Amended December 8th, 1858.

ARTICLE I.

OF THE NAME AND STYLE OF THE SOCIETY.

The style of this Society shall be "*The Wisconsin State Agricultural Society.*" Its objects shall be to promote and improve the condition of Agriculture, Horticulture, and the Mechanic, Manufacturing, and Household Arts.

ARTICLE II.

OF THE MEMBERS.

The Society shall consist of such citizens of this and other States as shall signify their wish to become members, and shall pay, on subscribing, not less than one dollar, and annually thereafter one dollar; and also of honorary and corresponding members. The Presidents of County Agricultural Societies, or a delegate from each, shall be *ex-officio* members of this Society. The payment of ten dollars, or more, at one time, shall constitute a member for life, and shall exempt the donor from annual contributions.

ARTICLE III.

OF THE OFFICERS.

The officers of the Society shall consist of a President, as many Vice Presidents as there are Congressional Districts in the State, (one of whom shall be located in each), a Recording Secretary who shall be the Corresponding Secretary, a Treas-

urer, an Executive Committee—to consist of the officers above mentioned, and seven additional members, together with the three Vice Presidents of the Society, whose term of office last expired—five of whom shall constitute a quorum, and all of whom shall become Life Members, according to the provisions of Article II; and of a General Committee, to consist of one member from each county organized for judicial purposes.

ARTICLE IV.

OF THE DUTIES OF THE OFFICERS.

The Recording and Corresponding Secretary shall keep the minutes and have charge of the books of the Society; and shall carry on the correspondence with other societies and individuals, and with the General Committee, in furtherance of the objects of the Society.

The Treasurer shall keep the funds of the Society, and disburse the same on the order of the President or a Vice President, countersigned by the Secretary, and shall make a report of the receipts and expenditures at the Annual Meeting in December.

The Executive Committee shall take charge of and distribute or preserve all seeds, plants, books, models, &c., and shall also have charge of all communications designed or calculated for publication, and so far as they may deem expedient, shall collate, arrange and publish the same in such manner and form as they may deem best calculated to promote the objects of the Society.

The General Committee are charged with the interests of the Society in the counties in which they shall respectively reside, and will constitute a medium of communication between the Executive Committee and the remote members of the Society.

ARTICLE V.

OF MEETINGS AND ELECTIONS.

There shall be an Annual Meeting of the Society at their rooms in Madison, on the second Wednesday of December, at

3 o'clock, P. M., in each year, and twenty days' notice thereof shall be given in one or more papers printed in the city of Madison.

The election of all the officers of this Society shall be held each year during and at the State Fair, and the exact time and place of election shall be notified by the Secretary, in the public newspapers, at least twenty days before such election, and the Life Members of the Society shall be the legal voters thereat: *Provided*, That the conditions of this section shall not control the called meeting of the Society now in session, this the eighth day of December, A. D. 1858; but all the officers of this Society whose offices become vacant December 31st, 1858, in accordance with the Constitution as amended February 14th, 1855, shall be elected at this the said meeting; and any members of this Society who became such previous to the commencement of this the said meeting, and no other person may vote for such officers; and all the elections shall be by ballot.

The General Committee shall be appointed by the Executive Committee. The Executive Committee shall also have power to fill any vacancies which may occur in the offices of the Society.

Special meetings may be called by the Executive Committee, on giving twenty days notice in the public papers; which notice shall state the day, hour, and place of said meeting. Ten members shall form a quorum for the transaction of business.

ARTICLE VI.

OF THE ANNUAL FAIR.

The Society shall hold an Annual Cattle Show and Fair at such time and place as shall be designated by the Executive Committee, who shall prepare a Premium List, appoint the Viewing Committees, and award the Premiums at the same. It shall be the duty of all the officers to attend the Annual Cattle Show and Fair.

ARTICLE VII.

OF AMENDMENTS.

This Constitution may be amended by a vote of two-thirds of the members attending any Annual Meeting, notice of all proposed amendments having been given specifically in writing at the previous Annual Meeting, and recorded in the minutes of proceedings.

STATE AGRICULTURAL ROOMS,
January, 1860.

I certify the above to be a true copy of the Constitution of the Wisconsin State Agricultural Society, as amended December 8th, 1858.

J. W. HOYT,
Sec'y of Committee of Revision, and Sec'y W. S. A. S.

BY-LAWS

OF THE EXECUTIVE COMMITTEE.

As Adopted February 7th, 1860.

SECTION I.

OF THE OFFICERS.

The officers of the Society shall, *ex-officio*, fill the corresponding offices in the Executive Committee.

SECTION II.

OF THE DUTIES OF THE OFFICERS.

The duties of the President, in addition to those defined by the Constitution and the By-Laws regulating the duties of the Permanent Committees, shall be as follows, to-wit :

1. To inspect the Fair Grounds, after they shall have been prepared for the Annual Exhibition by the Special Committee of Arrangements appointed for that purpose, and suggest such modifications or further preparations as he may deem necessary.

2. To formally open the Annual Fair of the Society, at such time as the Executive Committee may prescribe, with an appropriate address.

3. As the executive head of the Society, to have a general supervision and control of the entire Exhibition, subject only to the authority of the Executive Committee.

The duties of the Secretary, more specifically defined than in the Constitution, shall be as follows :

1. To make a faithful record of each meeting of the Executive Committee, and keep such record in a condition for the convenient reference of any member thereof, at any time ; also to make a record of every order drawn on the Treasurer, and delivered to parties in whose favor they were so drawn—separately entering and numbering the orders drawn to pay premiums and those to pay general expenses, and so defining them—and of all moneys due the society ; in all cases holding the parties so indebted responsible therefor until they shall have presented to him a certificate from the Treasurer, showing that the same has been paid.

2. To open and carry on such correspondence as may be advantageous to the Society or to the common cause of agricultural improvement, not only with individual agriculturists and eminent practical and scientific men of other industrial pursuits, but also with other societies or associations whose objects are kindred to ours, whether in this country or foreign lands, and to preserve a journal of such correspondence in the archives of the Society.

3. To collect and arrange for convenient examination standard agricultural works and periodical publications, together with such models, machines and implements as may be donated to, or otherwise acquired by the Society.

4. To investigate as far as practicable the nature of fertilizers, indigenous and cultivated plants, insects injurious to vegetation, &c., and to collect and preserve such specimens thereof as will illustrate the natural history and agricultural resources, condition, and progress of the State.

5. To institute, and collect reports therefrom, needed experiments relative to the preparation of the various soils of the State for economical culture, the cultivation of different grains, fruits, and garden vegetables, the breeding and raising of stock, &c., &c.

6. To visit by the advice of the Executive Committee, or as his own judgment may direct, the various portions of the State, and to give lectures on the science and practice of agriculture,

wherever and whenever they may be deemed most necessary or desirable.

7. To co-operate with the Superintendent of Public Instruction and the agent of the Normal School Board for the introduction and use in the schools of Wisconsin, of standard works on agriculture, and the other industrial arts and sciences.

8. To attend as many as possible of the industrial exhibitions of this country, particularly the County Fairs of Wisconsin ; to co-operate with the President and Special Committee of Arrangements for the judicious preparation and management of our State Exhibition ; and to have the sole supervision and control of the Office of Entry thereat.

9. To carefully prepare and superintend the publication of the Annual Report of the Society to the Governor of the State ; embodying therein the proceedings of the State Agricultural Society, an abstract of the reports of the incorporated County Agricultural Societies of the State, and such reports, essays and addresses, or other matter of information as may be calculated to enhance the value of said Report.

Finally, it shall be his duty, not only by the means above named, but also through such other instrumentalities as he may devise, and the Committee approve, to devote himself faithfully and unreservedly to the promotion of the industrial interests of the State.

It shall be the duty of the Treasurer—

1. To receive primarily and exclusively all moneys due the Society from whatever source.

2. To keep a full and faithful record of all receipts of moneys coming into his hands, and of the source whence derived, in a book specially furnished by and belonging to the Society, and to have the same open, at all reasonable times, to the inspection of any person or persons authorized by the Executive Committee to make such examination.

3. To likewise keep an exact record of every order by him paid ; and such record must be verified by the proper vouchers, showing that the sums therein named have been by him so paid.

SECTION III.

OF THE MEETINGS.

The Executive Committee shall meet annually, on the day preceding the day on which the Annual Meeting of the Society is held, on the first Tuesday of February, and again on the first day of the Annual Fair.

They shall also meet at the call of the Secretary—the President and a Vice President of the Society concurring—and may adjourn to any stated time.

SECTION IV.

OF A QUORUM.

At any meeting of the Executive Committee, four members thereof shall constitute a quorum for the transaction of business.

SECTION V.

OF PERMANENT COMMITTEES.

There shall be two permanent committees of the Executive Committee ; which shall be respectively styled the *Standing Committee*, and the *Finance Committee*.

The Standing Committee shall consist of the President, the Secretary, and the Treasurer, who shall have power in the recess of the Executive Committee to draw orders on the treasury for all necessary, current incidental expenses. But the Executive Committee shall have authority, and are hereby required to revise the proceedings or transactions of said Standing Committee, and endorse or disapprove of the same.

The Finance Committee, shall consist of the President and Treasurer, and it shall be their duty to suggest means for increasing the revenues of the Society.

They shall also have authority to invest any portion of the funds, of the Society that may from time to time be set apart, by the Executive Committee, for investment, disposing of such funds upon such terms and conditions as may be prescribed by the said Executive Committee.

Each of the above named sub-committees, shall be responsible for the faithful discharge of their duties to the Executive Committee, to whom an appeal may at any time be taken from their acts or decisions.

The auditing, adjusting, allowing or rejecting of all bills, claims, or demands, of whatsoever nature, against the Society, and the issuing of orders, upon the Treasurer for the payment of the same—except for the current, incidental expenses of the Society, as by this section already provided for—shall devolve upon the Executive Committee. And it shall be the duty of said Committee to annually examine the books, papers, and vouchers of the Treasurer and Secretary, and compare the same, and adjust the accounts between those officers and the Society, and to report thereon at the Annual Meeting in December.

SECTION VI.

OF THE ORDER OF BUSINESS.

The following order of business shall be observed at all the meetings of the Executive Committee :

1. Reading the minutes of the preceding meeting.
2. Reading the minutes and reports of Standing Committee.
3. Reading the minutes and reports of the Finance Committee.
4. Report of Auditing Committee.
5. Reports from Special Committees.
6. Communications from the Secretary.
7. Communications from Members of the Committee.
8. Unfinished business.
9. Miscellaneous business.

This order of business may be suspended, however, at any time, by a vote of a majority of the members present.

SECTION VII.

OF THE FISCAL YEAR.

The fiscal year of the Society shall commence on the first Wednesday of December, in each year, and all annual reports of the year previous shall be made up at that time.

SECTION VIII.

OF THE EXPIRATION OF THE TERMS OF OFFICE.

The terms of office of all officers of the Society shall expire on the 31st day of December, in each year.

SECTION IX.

OF AMENDMENTS.

These By-Laws may be amended at any regular meeting of the Executive Committee, by a vote of eight of the members thereof.

STATE AGRICULTURAL ROOMS,

MADISON, Feb. 1860.

The above is a true copy of the By-Laws of the Executive Committee of the Wisconsin State Agricultural Society, as adopted February 7th, 1860.

J. W. HOYT,

Ch'n of Com. on By-Laws, and Sec'y of the Society.

LIFE MEMBERS.

Abbott, Chauncey, Madison,
Allen, H. M., Evansville,
Atwood, David, Madison,
Ayers, J. V., Kenosha,
Bacon, W. D., Waukesha,
Benson, S. W., Bloomfield,
Benedict, J. D., Bristol,
Billings, H. M., Highland,
Bird, I. W., Jefferson,
Brazea, Benjamin, Wawatosa,
Carpenter, J. A.,
Carver, P. T., Delavan,
Chase, J. I., Racine,
Chase, Enoch, Milwaukee,
Chase, Horace, Milwaukee,
Cheeney, Rufus, Whitewater,
Coggswell, A. W., Brookfield,
Colby, Charles, Janesville,
Crawl, John, Centre,
Cross, J. B., Milwaukee,
Daggett, S. S.. Milwaukee,
Davis, N. P., Pierceville,
Davis, S. B., Milwaukee,
Davis, John, Milwaukee,
Dean, N. W., Madison,
Delaplaine, G. P., Madison,
Dodge, J. E., Potosi,
Dousman, T. C., Waterville,
Dousman, J. B., Milwaukee,
Durkee, Charles, Kenosha,
Durkee, H., Kenosha,
Dunn, Andrew, Portage City,
Drury, E. W., Fond du Lac,
Edgerton, E. W., Summit,
Elmore, A. E., Mukwonago,
Ellsworth, O., Milwaukee,
Enos, Elihu, Waukesha,
Farwell, L. J., Madison,
Eairbanks, E., St. Johnsbury, Vt
Ferguson, Benj., Fox Lake,
Field, Martin, Mukwonago,
Gillett, R. S., Tomah,
Grant, Albert, Milwaukee,
Gurnsey, Orrin, Milwaukee,
Harrington, N. W., Janesville,
Helfenstein, J. A., Delavan,
Hilbrand, W. B. Milwaukee,
Hill, P. B., Milwaukee,
Hinkley, B. R., Summit,
Holton, Edward, Milwaukee,
Holt, David, Madison,
Hoskins, J. W., Madison,
Hoyt, J. W., Madison,
Hughes, Whelden, Janesville,

Hurlburt, E., Oconomowoc,
Ingham, A. C., Madison,
Janssen, E. H., Mequon,
Johnson, J. C., Leyden,
Juneau, Paul,* Juneau,
Kellog, L. H., Madison,
Keyes, E. W., Madison,
Kneeland, Moses, Milwaukee,
Knapp, J. G., Madison,
Lapham, I. A., Milwaukee,
Lawton, J. G., Green Bay,
Larkin, C. H., Milwaukee,
Learned, J. M., Janesville,
Lockwood, John, Milwaukee,
Ludington, H., Milwaukee,
Lynde, W. P., Milwaukee,
Macy, J. B.,* Fond du Lac,
Marshall, Samuel, Madison,
Mills, Simeon, Madison,
Miltimore, Ira, Janesville,
Mitchell, Alex., Milwaukee,
Morse, D. S., Milwaukee,
Morse, Samuel, Milwaukee,
Needham, J. P., Wawatosa,
Newcomb, S. B., Cold Spring,
Paddock, George, Milwaukee,
Palmer, H. L., Milwaukee,
Peffer, George P., Pewaukee,
Pinckney, B., Fond du Lac,
Powers, D. J., Madison,
Power, D. G., Milwaukee,
Resague, A. C., Janesville,
Richards, Richard, Racine,
Robbins, J. V., Madison,
Rogers, J. H., Milwaukee,
Roe, J. P., Franklin,
Roddis, T. R., Milwaukee,
Ruble, Simon, Beloit,
Sage, E. C., New Lisbon,
Sinclair, Kenosha,
Scott, S. B., Milwaukee,
Seville, James, Milwaukee,
Sexton, Lester, Summit,
Shepherd, Clarence, Milwaukee,
Smith, G. B., Madison,
Shipman, S. V., Madison,
Spaulding, M., Harmony,
Stilson, Eli, Oshkosh,
Taylor, W. R., Cottage Grove,
Tenney, H. A., Madison,
Thomas, M. J.,* Fond du Lac,
Todd, J. G., Janesville,
Throop, B., Milwaukee,
Webster, Martin, Fox Lake,
Weed, Charles,* Madison,
West, S. C., Milwaukee,
White, W. A.,* Madison,
Whittlesey, T. T., Ph. Branch,
Wilcox, C. T., Janesville,
Willard, J. F., Janesville,
Williams, David, Springfield,
Williams, C. H., Baraboo,
Wilson, H. O., Milwaukee.

* Deceased.

TRANSACTIONS

OF THE

WISCONSIN STATE AGRICULTURAL SOCIETY

FOR 1858.

OFFICERS OF THE SOCIETY.

1858.

PRESIDENT:

J. F. WILLARD, Janesville.

VICE PRESIDENTS:

First District—O. F. BARTLETT, East Troy;
Second District—A. D. KIRKPATRICK, Dayton;
Third District—EDWARD PIER, Fond du Lac.

SECRETARY:

D. J. POWERS, Madison.

TREASURER:

DAVID ATWOOD, Madison.

ADDITIONAL MEMBERS OF EXECUTIVE COMMITTEE:

S. S. DAGGETT, Milwaukee;
L. W. JOINER, Wyoming;
DAVID WILLIAMS, Springfield;
WM. R. TAYLOR, Cottage Grove;
G. H. WILLISTON, Janesville;
TEMPLE CLARK, Manitowoc;
ADAM E. RAY, Eagle.

EX-PRESIDENTS, EX-OFFICIO MEMBERS:

H. M. BILLINGS, E. W. EDGERTON,
HARVEY DURKEE.

REPORT

OF THE

EXECUTIVE COMMITTEE FOR 1858.

To His Excellency, Alexander W. Randall,

Governor of the State of Wisconsin:

Sir:—In compliance with the requirements of law and the established usages of the State Agricultural Society, the Executive Committee would respectfully report:

That during the past year, nothing extraordinary has occurred within the range of the duties of said Society; as hitherto its efforts have been mainly directed to the distribution of useful seeds and plants, together with such information as was available for their culture; to the offering of appropriate premiums for the most successful culture of the various leading crops; also premiums for the best essays and treatises on the leading subjects of Agriculture, Horticulture, Rural Architecture, &c., &c. But more particularly were the energies and resources of the Society devoted to the preparation for, and holding of the Annual Fair.

Among the seeds distributed by the Society during the past year, none other has been so prominent or important as that of the Chinese Sugar Cane (*Sorghum Saccharatum*).

The promising success of this Cane, so far as tried, during the year 1857, fully satisfied all who gave the subject atten-

tion, that its careful and intelligent culture would be found not only remunerative, but profitable, throughout most, if not all of the settled portions of the State.

Therefore, for the purpose of promoting its more rapid dissemination and culture, by the agricultural masses of the State, the Society obtained a considerable quantity of the seed, from the regions south of us, where it had been more extensively cultivated and well ripened, and distributed it through the agency of the members of the Society, the members of the Legislature, and such other opportunities as presented. Further, the Society offered liberal premiums for the best growths of the Cane, as well as for the best processes of manufacture and production of molasses, syrup and sugar, therefrom.

The results of the foregoing efforts, so far as can be judged at this early day, have fully equalled the anticipations of all parties, and in fact exceeded them; and it is a well settled opinion on the part of the Committee, that the experiment of the culture and manufacture of the Cane has been fairly and fully tried, by thousands of the farmers of the State, and, so far as heard from, with nearly uniform and satisfactory results. And not only has the fact of the practicability of its culture been well established, but, what is still more conclusive and encouraging, a large amount of molasses, syrup, and some common sugar, has absolutely been made. In fact, good judges estimate a saving to the State the present year, on account of these productions, of over a hundred thousand dollars; no insignificant item in times like the present.

What is still further gratifying in the matter, is the fact that in all reasonably favorable cases, the seed of the Cane ripened, during the past season, amply for all purposes of replanting; thus fully establishing the important fact, that it can and will usually ripen, except upon very unfavorable soil, or in unfavorable seasons.

The great and universal question first of all to be asked and answered in relation to it, "*Will it pay?*" is also pretty well settled, even by the imperfect experiments already tried. The

bulk of them go to show, that an ordinarily good soil will as surely grow a good crop of it, as of Indian corn ; and with but a trifle, if any more labor. And further, that a good ordinary crop will yield two hundred gallons of good syrup per acre, besides several tons of fodder and seed, from the surplus leaves and tops of the stalks.

The experience already had also shows that, even with the imperfect machinery and information of the first experiments, the Cane has been grown and the syrup manufactured, at an average expense of not over twenty-five cents per gallon ; being a saving of at least one hundred per cent. of what a similar southern article would cost the merchants and the dealers of the country delivered in store ; and nearly twice that saving to such consumers as produce it for their own use, and thereby save all intermediate profits.

If *Sorghum* has done this much for our people "in the green tree, what may we not expect in the dry?" Highly important results to our State, as well as to the whole North-West, are confidently predicted for this new item of production, in the future, and that at no distant day.

In all probability there will be ten times the amount of it cultivated the present year, that there was during the past. Judging from the entire sucess of many experiments of graining the syrup into tolerable brown sugar, no reasonable doubt seems to exist, as to its being generally done, as easily as the maple syrup, with a little more experience of cultivation, grinding and boiling, and with more suitable apparatus. That our people will soon be able to raise their entire sugar and molasses crop, and, may be, a surplus for exportation, seems by no means improbable. The supplying of the home demand merely, will prove a saving of some millions per annum to the State, of money kept at home and paid for home labor.

The seed of the Hungarian Grass (Millium), a forage plant that has been attracting considerable attention for the last two years, in Iowa and other prairie districts, was also extensively distributed over all parts of the State, last spring. What de-

gree of favor or sucess it has met with, the Committee are not as yet very well informed; only a few reports having been received in relation to it. It is said to considerably resemble millet, except that it has more leaves, and makes much better forage. It is said to thrive exceedingly well upon the high and dry prairies, especially in dry seasons, when timothy would prove a failure. Its success is understood to be owing to its striking a deep root. The statements in relation to it, go to show that it matures in a very short period, and yields from four to five tons per acre of hay and seed,—largely of the latter; but it has to be annually sown. Another season will do much in the way of deciding its merits and adaptation to our wants.

The Committee also circulated a quantity of Sweet Potatoes (received as a present from a gentleman in Indiana) quite extensively among the careful cultivators, for experimental trial and cultivation, and had the satisfaction of seeing a fine show of well-grown tubers, at the State Fair, as the result of the effort; clearly proving, (what was, to be sure, partially known before), that they can be successfully cultivated in ample quantities, at least for the purpose of luxury and variety among our people.

The Committee have given the subject of improving Seed Wheat of the State a good deal of attention, and have carefully investigated the often proposed plan of importing new seed from Canada. A very competent agent and practical farmer, was sent by the committee to the best wheat districts of Canada, in the autumn of 1857, (Hon. David Williams, of Walworth County), to enquire into the matter, and report what seemed proper to be done under the circumstances. After a careful examination of their various specimens of wheat, and a full inquiry in relation to the insect depredations, and liabilities, he came to the conclusion that importations should be made at least with great care, to avoid the introduction of new species of destructive insects, the liability of which seemed to him very great. A careful comparison of the best specimens brought from Canada, with the best from our own dry burr-oak

districts, shows but little if any superiority in the imported article ; pretty clearly establishing the incorrectness of the quite common notion, that our wheat degenerates by cultivation, and needs a frequent renewal from Canada or elsewhere, to sustain its quality.

The Committee are fully of the opinion, that if our farmers take more pains in sowing good clean seed upon dry and well cultivated soil, and harvest it before it shrinks and turns dark colored from over-ripeness and exposure to storms, that as handsome club wheat can be grown for an indefinite series of years as is first sown,—that the complaint of deterioration is more from the faulty cultivation than from any lack in the soil.

The Annual Cattle Show and Fair of the Society was held at Madison during the first week of October, and was, notwithstanding the rather inclement weather, largely attended by the sterling classes of the people, not only as exhibitors, but as spectators. Some two thousand entries of animals, articles and products were made, embracing altogether probably a better show than was ever before made in our own, or any other State not older than ours. The show of horses, neat stock, sheep and swine, were all of a high order and good quality, and reflected much credit upon the enterprise and progressive spirit of our people.

On the other hand, the labor-saving machinery, both for agricultural and other purposes, was highly creditable to its inventors and manufacturers, and indicated a rapid progress in all the labor-saving arts of this wonderfully progressive age.

The products of the soil were in no way inferior to the other departments of the show, but proved conclusively that we had not only the climate and soil, but the cultivators, that could produce the most complete and ample results.

The fruit department, particularly, notwithstanding the unfavorable season, was largely and splendidly represented, especially with the most sterling of all fruit, the apple, in great variety and profusion, and of as fair quality as any country can boast.

Several richly equipped and efficient appearing Military and Fire companies paraded upon the grounds during the Fair, displaying superior tactics, and gayly enlivening the scene.

Altogether the occasion was one of extraordinary gratification and usefulness to all parties, and passed off with the utmost good feeling in all respects, evidencing anew to all observers, that such agricultural jubilees are a natural outgrowth of our age and people, and highly proper to be encouraged and fostered as schools of usefulness for the great masses of the people.

The want of permanent and well fitted Fair Grounds for these occasions is sadly felt, and is a source of large expenditure and trouble annually in making the requisite provision, saying nothing of the fact, that, at best, temporary arrangements but poorly accommodate the interests and parties concerned. If some common central location could be agreed and settled upon, and fitted permanently for these purposes, it would greatly simplify, as well as diminish, the annual labors and expenditures of the Society. Until such permanent fitting is had, our agricultural fairs will fall considerably short of what they ought to be.

The Executive Committee would express a wish that the law authorizing the collection of the annual statistics of the agricultural productions of the State, should be continued, and so amended, if need be, as to render its operation more certain and complete.

The collecting of such annual reliable information of the quantities of grain grown, of the various varieties; of the horses, the stock and animals; of the increase or decrease, advancing or retrograding, of the different interests, seems to them a matter of the first importance, not only to our own people, but to those looking this way from without the State for a market in which to buy or deal in our staple commercial products. When once fully understood by the officers whose duty it is to collect and embody such statistical facts, it would seem a simple duty to perform, and one that needs entail but little additional expense upon the people.

The great importance of the wool-growing interests to the State, and the commonly prevailing opinion that the business of sheep-keeping is to a considerable extent being abandoned throughout the State, on account of the ravages of dogs, seems to call for enquiry, and, if well founded, for judicious legislation, to arrest any retrograde movement of that kind.

In addition to whatever may be required upon the foregoing subjects in the way of legislation, the Executive Committee are of the opinion that few things could or would be more acceptable to the agricultural masses, than a large diminution in the amount of annual legislation and taxes. No sentiment or opinion seems to be more indelibly engraven upon the public mind, than that there is a great opportunity for reform in these respects. May they not hope, under the general pressure of hard times, and the economy consequent thereon, to witness an improvement in this direction?

The copy for volumes eight and nine, for the years 1858 and 1859, of the Transactions of the Society, will be properly prepared for publication during the current year, and can be put to press if the Legislature deems it advisable so to order. The publication of these annual volumes of agricultural reports has become an established practice in most of the leading agricultural States, and, when judiciously gotten up, they are undoubtedly an embodiment of much valuable information, that would, in no other way equally effective, be brought before the minds of the masses of the people.

A statement of the fiscal affairs of the Society, showing its receipts and disbursements, will be found appended hereto; and full and complete vouchers will be found on file in this office for all the items of each account; all of which is respectfully submitted.

STATEMENT

OF THE FISCAL AFFAIRS OF THE WISCONSIN STATE AGRICULTURAL SOCIETY, FOR THE YEAR 1858.

Receipts.

To balance over from 1857,	$1,273 61	
State appropriation,	3,000 00	
gross receipts from State Fair and life and annual memberships,	6,323 04	
amount from Madison subscription,	1,199 25	
		$11,795 90

Expenditures.

By premiums paid for 1858, out of appropriation,	$2,641 00	
diplomas all in all out of appropriation,	181 50	
Executive Committee expenses,	380 75	
office expenses,	147 10	
express charges,	25 50	
postage,	55 69	
rent,	200 00	
salaries,	1,000 00	
fitting Fair Grounds, all in all,	1,957 00	
arrearages of 1857,	347 23	
miscellaneous expenses of the Fair and during year,	2,794 56	
bills allowed and unpaid to December 10th,	726 13	
balance of cash on hand,	1,339 44	
		$11,795 90

In behalf of the Executive Committee,

D. J. POWERS, *Secretary*.

STATE AGRICULTURAL ROOMS,
MADISON, Jan. 1, 1859.

EXECUTIVE MEETING.

STATE AGRICULTURAL ROOMS,
MADISON, February 1, 1858.

The Executive Committee met pursuant to adjournment, at 7 o'clock, P. M. Present, Messrs. Kirkpatrick, Williston, Ray, Joiner, Atwood, and Powers.

The meeting was called to order by Vice President Kirkpatrick. Minutes of last meeting read and approved.

The Treasurer elect submitted to the Committee his bond, with the names of N. W. Dean and H. A. Tenney as security; accepted, and placed on file.

After the consideration of some matters of a general character, the Committee adjourned to 10, A. M., of Tuesday, the 2d inst.

TUESDAY, 10 o'clock, A. M.

Present, same members as at previous session, except Mr. Powers, Secretary, detained by sickness.

On motion, Mr. Williston acted as Secretary.

The number of members present not seeming to warrant the transaction of important business, the Committee, after a further discussion of subjects of general interest, adjourned to 7 o'clock, P. M.

TUESDAY, 7 o'clock, P. M.

Met pursuant to adjournment. Present, same members as before with the addition of Messrs. Willard and Daggett. President Willard in the Chair.

The Committee took up the subject of revising the last years's Premium List for use the current year, and after some time spent thereon, adjourned to 9 o'clock, A. M., of Wednesday, the 3d inst.

WEDNESDAY, 9 o'clock, A. M.

Present, as before, with the addition of H. M. Billings. President in the Chair.

The Secretary laid before the Committee a communication from Hon. Edward Pier, of Fond du Lac, declining, on account of ill health, to accept the office of Vice President, to which he was elected at the Annual Meeting.

The declination was accepted; and

On motion of H. M. Billings, Hon. F. D. McCarty, of Fond du Lac, was unanimously chosen to fill the vacancy.

The fact was also communicated that N. P. Davis, Esq., of Pierceville, a member of the Executive Committee, had removed from the State, thereby creating another vacancy in the Board.

Whereupon the place was declared vacant; and

On motion of D. J. Powers, Hon. William R. Taylor, of Cottage Grove, was duly elected to fill said vacancy.

Revision of Premium List was resumed.

Adjourned to 2 o'clock, P. M.

WEDNESDAY, 2 o'clock, P. M.

The Committee met, and after the completion of the Premium List, proceeded to appoint the Judges for the next Annual Fair.

Resolved, That a committee of three be appointed to perfect and publish the Premium List; and further, that said com-

mittee be, and hereby are, clothed with complete and full authority to determine the place at which the next Fair shall be held, and to make any and all needful arrangements therefor, on behalf of the Executive Committee and of the Society.

J. F. Willard, D. J. Powers and S. S. Daggett were appointed said committee.

On motion of Mr. Powers, it was

Resolved, That the Fair be held on the 4th, 5th, 6th, 7th and 8th of October.

The Committee then adjourned to 9 o'clock, A. M., of Thursday.

THURSDAY, 9 o'clock, A. M.

The Committee met pursuant to adjournment. Present, Messrs. Willard, Williams, Atwood, Joiner, Kirkpatrick and Powers.

On motion of Mr. Williams, it was

Resolved, That a committee of three, to be known as the Executive Council, be, and hereby are appointed, whose duty it shall be to superintend and generally manage the entire exhibition, after it shall have been duly opened; determining all questions of general regulation that may arise, and directing the Superintendents and subordinate officers in their various duties; and that said committee shall remain stationary at the Executive Office, and employ Marshals and aids to transmit their orders and execute their plans.

On motion, it was

Resolved, That Geo. O. Tiffany, A. E. Ray and David Williams be appointed a committee to revise the award of premiums as they come from the hands of the Judges, and have the same ready for announcement and payment at 11 o'clock, A. M., of Friday, the 8th of October.

The committee then appointed Superintendents for the several departments, and took a recess until 2 o'clock, P. M.

THURSDAY, 2 o'clock, P. M.

Present same members as before. President in the chair.

Various communications from persons claiming premiums that were or should have been awarded in 1856–7, were taken up and the claims allowed, as follows :

To Barrows & Lund, of Janesville, first premium on straw-cutter, operated by power during Fair of 1857—$10 00.

To Mrs. John Tinker, of Clinton, first premium for best variety of jellies—$5 00.

To Mrs. H. J. Starin, of Whitewater, balance due on premiums awarded at Fair of 1857—$12 00.

To Eli Stilson, of Oshkosh, first premium on field crop of carrots—$10 00.

To Geo. P. Peffer, of Pewaukee, a Life Membership, in full for his premiums on field crops of 1856.

To A. C. Resague, of Janesville, a Life Membership, for use of office and fixtures during State Fair of 1857.

Col. Atwood presented a memorial, asking the Legislature to make an appropriation to pay for printing volume of Transactions now published. The memorial was adopted, and Mr. Atwood appointed a committee to present the same to the Legislature.

Committee then adjourned to meet Friday the 5th inst., at 9, A. M.

FRIDAY, February 5th, 9 A. M.

The Committee met at the appointed time.

Present, Messrs. Willard, Atwood, Ray, Kirkpatrick and Powers.

President in the chair.

Prof. J. W. Hoyt presented to the Committee the draft of a memorial to the Legislature, asking for the establishment of an Agricultural College.

On motion, the memorial was approved, and Hon. L. W. Joiner was appointed a committee to present the same to the Legislature on behalf of the Executive Committee and the Society.

On motion, Messrs. Willard, Atwood and Powers, were appointed a committee to complete the settlement of all outstanding accounts with the late Secretary, and all other parties, up to date.

On motion of Mr. Powers, it was

Resolved, That premiums of twenty-five dollars each be offered for the best original essays, from Wisconsin authors, on the following subjects, to-wit:

1st. On the Best system of Farm Management for Wisconsin.

2d. On the Best Plan, Construction, and Arrangement of Farm Buildings for a medium sized Farm.

3d. On Horticulture, as adapted to the Wants and Circumstances of our State.

On motion, it was

Resolved, That the Secretary be authorized and directed to purchase and distribute, at his discretion, such vegetable, grain, fruit, and flower seeds, as he may deem proper and useful.

The Committee then adjourned without day.

D. J. POWERS, *Sec'y.*

STATE FAIR OF 1858.

The Eighth Annual Fair of the Society was held at Madison on the 4th to the 8th of October, inclusive, and, considering all the circumstances of hard times and bad weather, was extremely well attended; it having been estimated that nearly or quite FIFTY THOUSAND persons entered the gates during the continuance of the Exhibition.

The aggregate receipts from all sources were between six and seven thousand dollars, and the entries numbered some two thousand, embracing many choice things in the way of animal and vegetable products, as well as numerous articles demonstrative of mechanical ingenuity and skill. Indeed it was justly deemed a most creditable display, both to the exhibitors and to the State.

The Grounds were admirably adapted to the purpose, being within the city limits, directly on the Milwaukee & Mississippi Railroad, and affording from their elevated and beautifully undulating surface, a most delightful view of the city, the Four Lakes, and a vast area of handsome farming lands.

The Fittings, in view of the fact that they were temporary, were more than usually neat and imposing. The Hall of Fine Arts—though quite too small for the purpose intended—was particularly so, being an octagon, with a wing in the rear occupied as a ladies sitting room, and crowned with an observatory, from which floated the stars and stripes of our country.

The Opening Address by the President, was delivered from the Committee Stand at 10 o'clock, A. M., of Wednesday, and

the Annual Address by Hon. Cassius M. Clay, of Kentucky, on Friday, at the same hour. The former was highly appropriate to the occasion, and the latter a noble and masterly demonstration of the applicability of the sciences to the business of farming.

Mr. Clay is one of the most successful farmers in the Union, and the notoriety of this fact gave additional weight and influence to his earnest and eloquent words. He spoke from brief notes, and for two hours held the vast multitude who eagerly pressed to hear, spell-bound by the power of his logic and the magic eloquence of his oratory.

The eminent success of the Fair, in all its departments, was but another evidence of the growing interest among the people, and a new encouragement to the friends of enterprise and progress to persevere in their efforts for the advancement of the industrial interests of our State.

OPENING ADDRESS.

BY HON. J. F. WILLARD, PRESIDENT OF THE SOCIETY.

Gentlemen of the Wisconsin State Agricultural Society, and Fellow Citizens:

We are not here to-day to celebrate victories obtained in war, nor yet those of a successful political campaign; but one more *glorious* than either—the achievements of Agriculture and the Mechanic Arts!—the victory of mind over matter—of intelligence over ignorance—of industry over idleness. But a few short years have elapsed since the territory now

comprised within the limits of the State of Wisconsin, was the abode of the savage and wild beast. These broad prairies and woodlands were the grand hunting grounds of the red man.

Within the period of a quarter of a century, this wilderness has become a "fruitful field." The wand of Agriculture has passed over it, and by its magic, these wastes are transformed into a goodly heritage ;—instead of the tall grass of the prairies, fields of wheat and corn undulate to the passing breeze ; —where once the wild flower bloomed to "waste its sweetness on the desert air," now is seen its more "cultivated" sister, cherished and appreciated.

The site of the Indian wigwam is now occupied by the stately mansion and substantial farm-house. Where but recently a few wild men were scattered here and there over this broad expanse, now a dense population of hundreds of thousands of civilized and intelligent freemen occupy the country. Civilization and intelligence have taken possession of this wide domain. Here are the evidences all around us. These are *our* jewels.

Upon yonder eminence, where but late stood the Indian hut, whose smoke curled lazily towards the clouds, fit emblem of his own character—*now* that eminence is crowned with a temple dedicated to the Fine Arts. But late, the bloody Sioux encamped on these veritable grounds, seeking the life of his brother Indian. 'Tis now a "tented field," to be sure, but we celebrate the arts of peace. More late, naught but the whoop of the savage and the howl of the wild beast broke the silence —now the lowing of herds, the bleating of flocks, and the merry and joyous voices of thousands of an intelligent population make the welkin ring with gladness. Late might have been seen here the rude scaffold, erected to dry the flesh and skins of the chase, and perchance a few scalps from human heads might have adorned these bushes and saplings, trophies of savage valor.

What do we see to-day? Look abroad over these grounds and be proud, and thank God for the change. Let us thank

our Maker that we belong to a civilized, and not a savage race —that we are Christian and not heathen men. What has wrought this change? Why, sirs, the Agricultural army is marching towards the setting sun—"Westward the star of Empire takes its way." Agriculture has taken possession of these fair lands, and tamed its wild surface, and rendered it subservient to the wants of man—of civilized man. The Mechanic Arts have followed in its train, and the Fine Arts, by an unerring law of nature, find their *level here*. What heart can remain unmoved? What bosom refrain from emotions of honest pride while we contemplate the scene before us? We meet here to celebrate the conquests of Agriculture and the Mechanic Arts. We come to greet and encourage each other in our various pursuits and make notes and suggestions for our future improvement.

We have before us fitting evidences of the energy, intelligence, skill and refinement of the industrial classes of our young and vigorous State.

A large majority of the people of Wisconsin are tillers of the soil. Ours is, emphatically, an *Agricultural* State, and we glory in our noble calling. Wisconsin farmers and *mechanics* are not numbered among those who feel themselves degraded by a *practical* demonstration of the text "that by the sweat of his brow man shall eat his bread." We construe it to mean EARN his bread. Not unlike republican Rome shall Wisconsin honor her toiling sons, and bring them, Cincinnatus like, from the plow, and make them *toiling men* of State.

Labor is honorable—it is ennobling. The surest indications of national prosperity are found in the fact that the laborer is elevated, and the idler discarded,—and we are here to-day to personify labor—to eulogize it—to set it on high—to bow in *reverence* before it, and proclaim to all the world that Wisconsin delights to honor the man who labors with his own hands to procure for himself and family an *honest* maintenance and support.

Farmers, Mechanics, and all Working Men and Women generally: The managers of the State Agricultural Society have

made arrangements, as you see here, for a holiday for *all*. These arrangements are for you—the idle and lazy will not be here, (and we are glad to know that our State furnishes as few, to say the least, as any other in the Confederation.) And now permit me, fellow laborers, in behalf of the Society, to welcome you to these grounds, and to the privileges and immunities of this Annual Festival. On our part, we only ask the privilege of joining with you in celebrating the achievements of labor and industry. Here union and sympathy pervade all ranks, professions, and callings—here we have the most opposite extremes, apparently, brought into harmonious juxtaposition—the man of peace—the man of war—the politician—the plowman—the artizan—the miner—the sailor—the high and low—the rich and poor—all occupy but one platform. One idea possesses all—that we are a common brotherhood, and that for a brief season, at least, all else shall be forgotten, and we will give ourselves up to the enjoyment of the *ultima thule* of human conception—*millenial harmony and equality*.

To the officers and managers permit me to say that to make this Fair successful, and what it ought and must be—a credit to Agriculture and an honor to the State—every one must be at his post, and no sacrifice must be deemed too great in order to perform well the duties assigned to each. We know you—we know your zeal and fidelity, and believe you feel with us, that no pains shall be spared to make this Fair the best ever held in the Northwest.

And to those gentlemen and ladies appointed judges at this Fair: Great responsibility rests with you in order to its final success. To you will be committed the examination of all animals and articles on exhibition, and your individual attention will be required to do justice to all parties and satisfy the expectations of the public.

We wish full and definite reports from each committee, and though you cannot award to each exhibitor a premium, you will *notice*, in your report, all articles or animals which you consider meritorious, and give your opinions concerning them.

Your reports will be one of the most interesting features of the Fair, and nothing will be *listened* to with so much interest as the reading of them. We believe you appreciate this, and we have the utmost confidence, that your part of the programme will be performed with discrimination, ability and faithfulness, and that whatever conclusions you arrive at will be the honest convictions of your judgment.

Without further remark, we now declare the Fair of the Wisconsin State Agricultural Society of 1858, duly opened. Officers will repair to their several duties, and the people to the enjoyment of the occasion.

CORRESPONDENCE.

STATE AGRICULTURAL ROOMS,
MADISON, Wis., Oct. 8, 1858.

HON. CASSIUS M. CLAY:

At a meeting of the Wisconsin State Agricultural Society, held this evening, the following resolutions were unanimously adopted:

Resolved, That the thanks of this Society be presented to the Hon. C. M. CLAY for the able address, by him delivered this day at the Wisconsin State Fair, and that he be requested to furnish the Society with a copy of the same, for publication in its Annual Transactions.

Resolved, That the Secretary is hereby directed to furnish Mr. Clay with a copy of the above resolution.

Most Respectfully,
D. J. POWERS,
Sec. W. S. A. Society.

WHITE HALL, Mad. Co., Ky.,
Oct. 28, 1858.

MY DEAR SIR:

Your favor of the 8th inst. was duly received, forwarding me the resolutions of the Wisconsin State Agricultural Society, for which I beg you to return them my grateful ackowledgements. The address was extemporaneous, and intended rather for utility than rhetorical display. I have hastily written out its leading ideas, which I place at the disposal of the Society.

I have the honor to be,
Your and their most ob't serv't,
C. M. CLAY.

D. J. POWERS,
Sec. W. S. A., Madison, Wis.

ANNUAL ADDRESS.

BY HON. CASSIUS M. CLAY, OF KENTUCKY.

DELIVERED AT MADISON, OCT. 8, 1858.

LADIES AND GENTLEMEN:

In the remarks which I shall make to-day I shall attempt practical hints, drawn from a life-pursuit of agriculture, with an argument in favor of agricultural literature and agricultural colleges.

Agricultural literature is to be found in the general history of our race; in periodical journals; the transactions of societies; and special treatises upon culture, plants, and animals; to which may be added horticulture and landscape gardening. All of which may be embraced under the cant phrase of "*book farming.*" Some good practical farmers altogether decry "book farming!" They have seen certain things recommended in books, or farm journals, which when tried, were failures; and therefore they ignore all such sources of knowledge. The cause of failure was not in knowing too much, but too little. Here, as elsewhere,

> "A little learning is a dangerous thing,
> Drink *deep*, or taste not the Pierian spring."

What would we think of the man who would refuse to come to this Fair, in the conceit that he could see nothing new, or worthy of being seen? Would he be less a quack than the physician, who in all cases of disease trusts to one remedy, rejecting the experience of other men and all other remedies? "Book farming" is nothing more nor less than adding all the experience of all men and all the ages to your own. The man who imagines himself wiser than all the men of all the ages combined, is a fool! Let every farmer then avail himself of all

the sources of knowledge; especially let him take at least one agricultural journal. I never knew a man to do so, who did not confess that he was more than ten times paid for the outlay, in increased profits, from the knowledge thus obtained.

There are few arts and sciences that do not contribute to agricultural skill; and I venture to say, there is no wider field for all the powers of a large and sagacious intellect, than that of farming. Many suppose that any sort of an intellect will answer for a farmer: and when a son seems unfit for anything else, he is so made! I say, if you have a boy of bright intellect, make a farmer of him; if stupid and indolent, throw him away by making him a lawyer, a doctor or a preacher!

Let us see how much *science* has to do with the every day life of the farmer. Those elements which have most influence on animal and vegetable life, I call the "*vital forces.*" They may be thus classified:

1. Electricity.
2. Light.
3. Air.
4. Water.
5. Heat.

That *electricity*, atmospheric and telluric, (which are one,) has much to do with vegetable growth and animal life, is unquestionable. The growth and flowering of plants, and maturing of fruit, have, in France, been wonderfully hastened by the galvanic battery. And the effects of electricity, on animal life are well known to all scientific physicians. It may be said, "True, but how can we command this subtle fluid and compel it to our uses?" To do that is the province of an Agricultural College; where science and practical efforts may combine to solve the secrets of nature. When Franklin first discovered the identity of lightning and electricity as evolved from glass and resin, it seemed to many a bald, isolated, and useless fact. But behold, first the lightning rod—then the telegraph—then, the Atlantic cable! Who shall limit our powers over nature; and say that we shall not compel this power to

our every day use in the evolution of vegetable and animal life? The misery and crime which ever result from the pressure of population upon subsistence, may yet be remedied by the creative power, which Deity has shared with us in commanding the forces of nature, when he created man in his mental image.

Light, coming from the unfading sun, which beams gloriously upon us to-day—from chemical combustion, and other sources, has especially to do with animal and vegetable life, and is eminently a "vital force." Plants ever seek the light; and turn their leaves and boughs towards this source of life. When it is excluded, the plant turns white, and frail, and at length dies. In the coal mines of England, and the subterranean vaults of all mining countries, the workers become exhausted by the absence of light; and have to be relieved by relays frequently made. Yet the aristocracy of cities seem to be utterly ignorant of these facts! Ben Franklin was kind enough to inform them, in Paris, when they slept all day, and sat up all night, that there was a *better* and a cheaper light than that from lamps—the *Sun!* Palaces are built with windows, in seeming acknowledgement of this fact, but then shutters are placed outside, and shutters inside, and then curtains of various folds and stuffs, till the light is effectually excluded! Hence the disease, exhaustion and death of cities! Do not these need *science*, light, and life?

Air, one of the vital forces, is a compound; in its purest state, according to Humboldt, of 20.8 parts of oxygen, and 79.2 of nitrogen, in simple mixture. Silliman has it 20 of oxygen to 80 of nitrogen in bulk. Atmospheric air, in addition to these elements, contains 2000 to 5000 parts of carbonic acid gas, small quantities of carburetted hydrogen gas, ammoniacal vapors, and carbonate of ammonia; also fluids and solids near the earth.

The influence of air upon the vitality of vegetables is well known, which through the leaves throw off, and receive, many elements from the air. Experiments, made in Germany, show

that wheat grows and matures its grain when planted in isolated pounded granite, getting all its elements from the water and the air and the granite. It is not so well known however, that the leaves of trees decompose and destroy noxious malaria. When planted around stagnant pools and sluggish streams, which were destructive of life, they have rendered them healthful and innoxious.

The influence of air upon animal life is more apparent. Any one may make a simple experiment. Wax a table or board, and inclose a mouse in a glass, and make it air tight, by means of the waxed surface. The mouse at first breathes freely—then more feebly—then dies! The reason is, that the oxygen, the vital part of the air, is exhausted, then life ceases; as a taper expires for want of oil. The dark blood in the lungs (venous) comes in contact with the air inhaled, parts with a portion of its carbon, and then grows lighter; and passing through the left auricle of the heart, becomes arterial blood; passing through the arteries and the *capillary system*, it changes into nutrition, in part; is thrown off through the perspiratory vessels of the skin, in part; and the balance is returned through the veins into the right auricle of the heart, which by contraction and a valvular structure, throws it again into the lungs; where once more it becomes exposed to the air, and is made vital again. When the venous blood fails to throw off its carbon, and absorb oxygen, the blood returns unchanged into the arterial circulation, and produces paralysis of the heart, and arterial action, and death ensues!

Now with all these facts every scholar should be familiar; yet we find graduates of colleges and men in high places, utterly ignoring them. I have seen fifty or sixty men, women and children caged in a railroad car, where the air-lets were sham, being closed up with tin! The consequence was that the stove and the lungs of so many human beings exhausted the oxygen of the air faster than it could creep in at the cracks in the floor and walls, and all became deadly sick, by partial suffocation! What cared these men for the lives of their passengers, provided

they saved a little fuel! The subject of ventilation is one of momentous consequence, affecting the whole growth and life of the nation—ventilation of the school room—the church—the court house—the parlor—the bed-chamber and the dwelling of every sort.

WATER is another compound vital force—eight parts of oxygen to one of hydrogen, by weight; in volume one to two, in chemical combination.

Water, the most universal solvent is too well known as necessary to the vitality of vegetables and animals, to be dwelt upon. Its hydropathic uses are beginning to be understood, and eclectic physicians must introduce it more largely as a remedial agent. Its free use externally to stimulate the perspiratory vessels into healthful action, and thus avoid all those diseases miscalled "cold," cannot be too highly commended. Its absorbent powers are also great in proportion to its functions as a solvent.—Water, therefore, should not be used after standing long in close rooms, either for drinking or washing. And pure cistern water is better than spring water, which in its percolation through the earth and rocks, takes up in solution so many foreign ingredients, vegetable and mineral.

HEAT is the fifth and last force of which I shall treat. Its sources are much the same as light, and it is so wide in its influence upon life, as to form itself into a science, called "climatology."

CLIMATE does not depend solely on latitude, as is generally supposed, but upon altitude above and depth below the surface of the sea; upon the seas and sea currents; electrical currents; upon trade winds, and cardinal mountain currents; clouds, and moisture from rivers, lakes, and swamps; radiating powers of the soil; the dividing configuration of continents into peninsulas and capes; upon frozen polar seas; and extent of plains upon equatorial latitudes, and many innumerable surroundings.

On the American continent we gain 1.6 degrees Fahrenheit by each degree of latitude, as we approach the equator, till we enter the tropics, then we gain four-tenths of a degree, to each

degree of latitude. In Central Europe, 1.8 degree is gained to each degree of latitude.

In medium climes we gain 1° Fahrenheit to each 267 feet above the level of the sea. Within the tropics 1° to each 319 feet of altitude.

By descent below the earth's surface we gain, as shown by artesian wells (*Les puits de Grenelles de Paris*) near Paris, France, 1° Fahrenheit to each 58.3 feet. In the coal mines of England, 1° to each 59.6 feet. The artesian well of Messrs. Duponts, Louisville, Kentucky, is now over 2080 feet deep.—At 1700 feet the mercury stood at 76° Fahrenheit. Common well water stands at about 53° Fahrenheit. So the ratio of increase is much the same over the whole earth. Without speculating about the fluidity of the central regions, here is a practical fact. In the temperate regions, the point of mean temperature is 59 to 64 feet below the surface. So the best place to preserve meat in the tropics, would be one foot below the surface, in the temperate zones 60 feet under ground.

I will give some examples of climate thus influenced. In Central America, you find all climates under the same parallel of latitude. On the coast, the banana and cocoa nut, then the orange and the fig, then the apple and pear, and cherry, and Indian corn, then wheat and potatoes, then pines and ferns, and then eternal snows. The Pacific coast of North America is exceedingly mild because the winds set from the Chinese sea towards the land, and the warm ocean waters are forever giving out their heat in winter. On the Caspian Sea, latitude 46° 21′ North, in consequence of the radiation of the sandy and vast plains, the grape ripens well in the open air, the medium summer heat being 70° Fahrenheit, annual heat 48°, and the lowest winter heat 23° Fahrenheit. In Cincinnati, Ohio, U. S. A., John Lea, Esq., gives the annual temperature in sixteen years at 55°, highest temperature 95°, lowest 10° Fahrenheit. European statists claim an average temperature for good potable wine of about 49°, summer 63°, and medium winter above 33° Fahrenheit. At the Faroe Islands, 62° North latitude, the

waters never freeze ! This is owing to the gulf stream. The waters become heated in the great tropical cauldron of the Gulf of Mexico, flow past the Florida coast, diverge from the shores of New Foundland eastwardly, and at last give off their heat at the Faroes, so that there, in winter even, water never freezes ! The snow line, in consequence of the vast radiating plains, is higher north of the Himalaya mountains than south !

In Stormness, in the Orkney Isles, 58° North, the medium winter temperature is above 39° ; higher than it is in Paris, France, 48° 50′ North ! So the Agave Mexicana, or " century plant " blooms in open air in Devonshire, England ; but grapes do not make potable wine there. The sea protects the agave, whilst the clouds and north latitude prevent summer heat sufficient for the vine. For light has an influence upon the cellular tissues of plants, which is lost by diffusion, and is not compensated by equal degrees of heat. Thus does climatology form a science, to be mapped by isothermal, isotheral, and isochiminal lines ; and *not* by lines of latitude ! See now the millions of dollars yearly lost by vain experiments ! We see a plant or animal flourishing upon a given latitude ; forthwith, at great cost, we import them to the same latitude at our homes, and the plant and animals die, and our money is gone ! Why ? The climate is not the same ! Does not any one see that we want one or more scientific agricultural schools in each of the States, where learned men may define and map for us the climate, that we may know what to do in all such cases.

We spend millions of dollars yearly in providing a navy to protect our foreign commerce. That is all right, but shall we begrudge a few thousands of dollars to protect us from greater losses, by scientific development of agriculture ? A late report of Parliament shows that the annual crop of the British islands, including meats, is $3,000,000,000—an incredible sum, in comparison with which all their great commerce is a trifle ! Then how much more are our agricultural products compared to our commerce !

Before I quit the subject of climate, I will say a word upon acclimation. Seeds and plants should be carried from the north to the south as a general rule. Rev. C. E. Goodrich, of Utica, N. Y., imported potatoes from several tropical climes, but could not get improved plants but by *seeding anew*, the imported stock running down. I brought a fine sort of Irish potatoe from the city of Mexico, in 1847, but it failed to reproduce fine fruit here. In 1857, I planted corn from New York, in consequence of the difficulty of maturing the corn in the last few years. It matured well in Kentucky, where so much corn was frosted. My neighbor, Ben. Howard, a careful farmer, fearing that the frosted corn of last year would not germinate, procured seed corn from Mississippi. It bids fair to be all frost bitten, whilst my Kentucky corn is already ripe! About ten years ago I tried to acclimate the Black Hamburg grape vine, and fruit in the open air; the fruit was produced, but never became eatable. Laying it down in winter, never improved its hardiness, and it now lives barely, producing no fruit! So the "Sorghum" and "Imphee" are tropical plants; I warn our farmers against selling out all they have, to invest in Sorghum!

If the Southern States cannot compete, in sugar, with a bounty of three cents per pound, with the tropical islands, how can we expect to raise sugar in competition with the warm latitudes? The Chinese Sugar Cane may do well to feed stock for a few weeks before the frost comes, but I am fearful that for other purposes, it will turn out like the Morus Multicaulis, Dioscoria Batata, and Shanghai chickens! No doubt the great failure of the foreign vine in this country is owing to a *difference of climate*. To acclimate them, we must again and again reproduce them from the *seed*, or what is better, start with the native vine, and reproduce from the seed of that until we get varieties equal to or better than the European varieties.

ANIMAL AND VEGETABLE PROGRESSION.

Upon the full application of these "vital forces" under other favorable circumstances and surroundings, depend all develop-

ment. Like begets like, and the advance is from good to better—not from bad to best! You must have all the inert materials which compose living bodies, and then the fullest application of the "vital forces;" deep soil and well pulverized for plants, and generous food and shelter for animals. It's not the true policy to get the worst breeds of animals, and then shelter them on "the south side of a snow-bank," and feed on "oat chaff!" That is the true art of sinking! Get the best breeds and the best seeds, and keep both in good growing order. Any strain upon the vital energies of plants or animals is ever to be avoided. Thus not in the frozen regions, where cold pinches, nor in warm climates where heat enervates, do we find the highest types of animal development and beauty; but in the temperate zones, the freedom from extremes allows the highest development. But herein is man blest above all other animals, that he is an *operative*. The little quail comes into the world clothed against the inclemencies of the season, with one beautiful covering; and with instinct at once escapes its enemies. Of all animals man is born most nude, and most helpless, for long years of infancy! But by his intelligence and *operative* powers he masters the masters of the forest, and with such textures enrobes himself, that the lilly of valley is not clothed like he! The quail has but one covering, but behold the infinite variety of human habiliments—see his palaces—his statues—his paintings—his landscapes—his ever-widening development of all natural surroundings? The green earth, the boundless sea, the infinite heavens are his resting place and home. To this operative power—to *labor*, does he owe his capability of accommodating himself to almost any climate. To work also is owing his highest development. So not in the so-called highest class, where indolence, ennui, vain ambitions and wasting cares, enervate, must we seek the true types of humanity; nor among the lower strata, where ignorance and crime, and the abuse of all the laws of health—where the use of mean tobacco, and meaner whisky, debase the human form—but in the *middle classes*, where frugality, indus-

try, peace, and the observance of all nature's laws, add beauty and health to the body, and serenity to the soul. Let us thank Providence that our institutions are based upon the true laws of nature. May they endure forever, for the happiness of Humanity, and the glory of God!

But I have already detained you too long. I thank you for your patience in listening to these scattered hints. May they lead you to reflection and action, that not in vain I shall have been honored by you. Your citizens ask of your Legislature, an Agricultural College; may I flatter myself that I have proven that science and practical agricultural life go hand in hand? I now take leave of you, with the aspiration that in connection with the University, which now adorns this Capital City—the most beautiful, in this most beautiful State—that other colleges for the million will yet be built; and that my name will not be forgotten by the far-off generations who shall enjoy its great and unmixed blessings!

SYNOPSIS OF ENTRIES AT THE FAIR OF 1858.

Horses and Mules,	200
Cattle,	160
Sheep,	101
Swine,	36
Poultry,	14
Field Crops,	8
Farm Products and Garden Vegetables,	280
Fruits and Flowers,	207
Dairy and Household Products, including wines, pickles, preserves and other delicacies,	180
Domestic Manufactures,	87
Farm and other Implements,	70
Manufactures other than Domestic,	114
Operative Machinery,	135
Plowing Match,	10
Trotting Match,	13
Equestrian Exhibition,	11
Plain Needle, Ornamental Needle and other Fancy Work,	149
Products of the Fine Arts,	94
Miscellaneous and Discretionary,	150
Whole number of entries,	2,119

REPORTS

OF COMMITTEES AND AWARDS OF PREMIUMS.

Made at the Eighth Annual Fair, held at Madison on the 4th to the 8th, inclusive, of October, 1858.

STOCK DEPARTMENT.

CATTLE.

SHORT HORNS.

Judges,..
- J. E. Culver, - - - *Milton.*
- Geo. C. Pratt, - - *Waukesha.*
- J. P. Roe, - - - - *Muskego.*
- R. Richards, - - - *Racine.*
- M. H. Shipley, - - - *Green Lake Co.*

The committee upon whom devolved an examination into the relative merits of the Durham Cattle on exhibition, having discharged that duty, ask leave to report the following awards:

Best Bull, 3 years old, C. H. Williams, Excelsior, Sauk co., Engraving or.	$15
2d..do.....do.....John Wentworth & Son, Fort Atkinson,.....	10
3d..do. ....do.....A. A. Redford, Menomonee, Waukesha county,....	5
Best Bull, 2 years old, Douglas & Scofield, Janesville,.....	10
2d..do.....do.....J. & W. Zuill, Johnstown,.....	7
3d..do.....do.....E. C. Sage, Wauwatosa,.....	5
Best Bull, 1 year old, J. Welch, Mount Clemons,.....	7
2d..do.....do.....S. W. Williams, Emerald Grove,..	5
3d..do.....do.....James Clements, Windsor,.....	3
Best Bull Calf, W. H. Talman, Janesville,.....	5
2d.....do.....John Fernley, LaGrange, Walworth county,.....	3
Best Cow, 3 years and over, John Fernley, LaGrange, Walworth county,..	15
2d..do.....do.....do...J. Welch, Dane county,.....	10
3d..do.....do. . ..do...A. M. Perry, Troy, Walworth county,.....	5
Best Heifer, 2 years old, John Fernley, LaGrange,.....	10
2d....do.....do...Charles H. Williams, Excelsior, Sauk county,...	7
3d....do.....do....Thos. Marshall, Oak Grove, Dodge county,.....	5
Best yearling Heifer, Charles H. Williams, Excelsor,.....	7
2d ...do.....do.....do.....do.....	5
3d....do.....do..Thomas Marshall, Oak Grove, Dodge county,.....	3
Best Heifer Calf, John Fernley, LaGrange,.....	5
2d....do.....Chas. H. Williams, Excelsior, Sauk county,.....	3

CATTLE FROM OTHER STATES.

Best Durham Bull, J. K. Wing, Trumbull Co., Ohio, 1st premium, Dip. and $10

The committee are unanimous in the opinion that the Durham Cattle on exhibition from Wisconsin, were much better than at any previous Fair. There were many animals in this class worthy of awards, and the limited number of premiums alone excluded them.

The foreign cattle were inferior, as a general thing, to our Wisconsin stock, and, in the opinion of the committee, should not be allowed to draw very largely upon the funds of the Society. Many of those labelled as full blood, were grades, and rather a low grade at that.

The following "pedigree" of premium bull "Paris" has been furnished by Mr. Williams, the owner and exhibitor:

No. 1,995, Am. Herd. Book. Red—bred by Edwin G. Bedford, Paris, Bourbon county, Ky.; sired by Perfection, 810, dam Nannie, sired by Doubloon, 433—Pocahontas, by Osceola, 788—Calista, by imp. Comet, (1854) —Cherry, by Misfortune, 716—Sprightly, by Sportsman, 998—Tulip, by Mirandi, (4,488)—Lady Munday, by imp. San Martin, (2599)—Mrs. Motte, of Ky., imp. 1817.

J. E. CULVER, *Ch'n.*

DEVONS, ALDERNEYS, AND CROSSES OF BLOOD CATTLE.

Judges,..
- C. L. MARTIN, - - - *Janesville.*
- THOS. MARSHALL, - - *Oak Grove.*
- LYMAN TOWN, - - - *Waupun.*
- ADIN BURDICK, - - *Edgerton.*
- CHARLES BROWN, - - - *Waukesha.*

The committee on Thorough Bred Cattle and the Crosses, beg leave to say that they have been much pleased with the large number of exceedingly good cattle that have been submitted to their examination, and are of the opinion, that the State of Wisconsin is beginning to realize the importance and advantage of breeding good stock. We are fast approaching the older States in these respects, and consequently in the character of our stock.

The following premiums are recommended :

DEVONS.

Best Bull, 6 years old, Thos. Reynolds, Madison, Engraving or..	$15
2d ..do..4....do....O. A. Gifford, Janesville,.....	10
3d....do..6....do....J. B. Crawford, Baraboo,.....	7
Best Bull 2 years old and over, L. Landon, Waupun,.....	10
2d....do .....do.....do.....Milo Jones, Ft. Atkinson,.....	7
Best Bull, one year old, Geo. Baker, Hustisford, Dodge county,.....	7
2d....do.....do.... .G. Goodrich Whitesville,.....	5
Best Bull Calf, L. Rawson, Oak Creek,.....	5
2d....do.....do.....do.....	3
Best Cow, 3 years and over, L. Rawson, Oak Creek,.....	15
2d....do.....do....do....Geo. Baker, Hustisford,..... ...	10
3d....do.....do....do....C. O'Brien, Oregon,.....	7

The committee have been furnished by Mr. Reynolds with the pedigree of his premium bull "Bloomfield 3d," as follows:

Bred by D. Davis, of Springfield, Vt. Sire, Bloomfield 2d, bred by H. M. Hall, of Burke, Vt.; g. sire, Bloomfield 1st, bred by Mr. Peterson, of Md.

Sire of Bloomfield 1st, Eclipse, imported by Mr. Patterson, of Md., from the herd of Mr. Bloomfield, of Warham, Norfolk, England.

Dam of Eclipse, Beauty, bred by H. N. Washburn, of Morris, Otsego county, N. Y.

ALDERNEYS, (JERSEYS).

Best Bull, 1 year old, J. V. Robbins, Burke, Dane county,.....	5
Best Cow, 6 years old,.....do.....do.....	15
2d ...do.....do.....do..... ..do.... ..do.....	10
3d....do.....do..... ...do .....do.....do.....	5
Best yearling Heifer,.....do.....do.....do.....	7
2d....do.....do..... do.....do.....do.....	5

CROSSES OF BLOOD CATTLE.

Best Bull, 3 years and over, Wm. Patterson, Richmond, Walworth county, Engraving or.....	15
2d best Bull, 3 years and over, J. S. Newton, Verona, Dane county,.....	10
3d....do.....do.....do....Wm. Warren, Madison,.....	5
Best Bull, 2 years old, C. H. Williams, Excelsior,.....	10
Best Bull Calf, J. R. Dye, Hebron, Jefferson county,.....	5
2d....do.....Van Kelike,..do.....do.....	3
Best Cow, 3 years and over, N. Root, Verona,.....	15
2d....do....do.....do... W. B. Knapp, Burke,.....	10

There was no competition on Alderneys, but the beautiful herd exhibited by Mr. Robbins, was so meritorious that your committee cannot forbear a special commendation. The Chairman, who has been accustomed to this race of cattle, thinks

BLOOMFIELD 3D.—Devon—Owned by THOS. REYNOLDS, Madison. First Prize at State Fair of 1858. See page 64.

one of the cows, ("Butter Cup,") equal to any cow of that blood that he has ever seen in the United States.

C. LOFTUS MARTIN, *Ch'n.*

WORKING OXEN, MILCH COWS, AND GRADE CATTLE.

Judges,..
- GEO. A. JENKINS, - - *Charleston.*
- E. C. SAGE, - - - - *Wauwatosa.*
- JOSEPH SPAULDING, - - *Harmony.*
- J. M. VAUGHAN, - - - *Waupaca.*
- JOHN W. BOYD. - - *Geneva.*

The committee on Grade and Fat Cattle, Working Oxen, and Milch Cows, submit the following:

Best Grade Cow, J. S. Newton, Verona,	$10
2d.....do.....Joshua Thayer, Palmyra,	7
3d.....do.....G. N. Willis,	5
Best 2 year old Heifer, C. W. Stewart, Fitchburg,	5
2d.....do.....do....O. A. Albee, Madison,	3
Best Yoke Oxen, 4 years old, Joshua Thayer, Palmyra,	10
2d.....do.....do.....L. Rawson, Oak Creek,	7
3d... ..do.....do.....J. H. Slavan, Madison,	5
Best Yoke 3 year old Steers, L. Rawson, Oak Creek,	7
2d.....do.....do.....C. W. Stewart, Fitchburg,	5
Best Milch Cow, John Tinker, Clinton, Rock county,	15
Best Yoke fat Cattle, C. H. Adsit, Deerfield, Dane county,	7
Best 5 Yoke Working Oxen, Amos Beecher, Cottage Grove,	10
Best fat Steer, E. W. Edgerton, Summit,	7
Best fat Cow, C. H. Adsit, Deerfield,	3

The Yoke of 3 year old Steers exhibited by L. Rawson, are Grade Devons of superior merit, and in addition to the premium recommended, are worthy of special commendation.

The number of Fat Cattle was small, but some of them were remarkably fine animals. The Grade Durham, 5 year old Steer exhibited by E. W. Edgerton, is a very superior animal, as will appear from the following statement of weight and measurement:

Height,	6 ft.
Length,	8 ft. 4 in.
Girth,	8 ft. 4 in.
Weight,	2,800 lbs.

In connection with their award of $15, to best Milch Cow, the committee have pleasure in submitting the following

STATEMENT:

My Cow is eight years old past—of the native breed—and calved on the 13th day of May, 1858.

She gave during the first ten days of June, 367 1-2 lbs. Milk, which made 14 lbs. of Butter. And from the 10th to the 20th of August, she gave 360 lbs. Milk, which made 13 lbs. of Butter.

The Cow was kept on timothy pasture throughout the summer. JOHN TINKER.

HORSES.

Judges,..
- B. R. HINKLEY, - - - *Summit.*
- MARTIN FIELD, - - - *Mukwonago.*
- J. M. LEARNED, - - - *Janesville.*
- M. VAN DUSEN, - - — — —
- Dr. J. B. DOUSMAN, - - *Milwaukee.*

The Committee, to whom was assigned the duty of reporting on the Blood Horses, Morgans, &c., are unanimous in recommending the following awards of premiums:

BLOOD HORSES.

Best Blood Stallions, 5 years old and over, Simon Ruble, Beloit,..... $30
2d....do.....do..... ..do.....do.... Geo. Mathers, Willow Springs, first premium last year,..... Dip.
Princeton, not kept for stock, S. Ruble, Beloit, discretionary, ...Dip.

MORGAN HORSES.

Best Stallion, 4 years old and over, A. G. Williams, Mauston,.. 20
2d.....do.....do.....do.... William Short, Albion,..... 15
Best Stallion, 2 years old, S. L. Sheldon, Madison,. 10
Best Stallion, 1 year old and over, S. M. Havens, Harmony,.. 3

BLACK HAWKS.

Best Stallion, 4 years old and over, D. E. Braisted, Fond du Lac,..... 20
2d.....do... . do.....do..... Thos. Marshall, Oak Grove,..... 15
Best Stallion, 3 years old and over, E. M. Danforth, Summit,.... 10
2d.....do.....do.....do..... W. P. Benson, Ft. Atkinson, Jeff. co., 5

CARRIAGE HORSES.

Best pair Carriage Horses, J. V. Robbins, Burke,..... 20
2d...do.....do..... H. P. Fales, Janesville,..... 15
Best single Carriage Horse, G. W. Montayne, Oregon, Dane co.,..... 10
2d....do..... ....do..... J. A. Ellis, Madison,..... 5
Long Island Black Hawk, W. P. Bentley, Dane co., discretionary,....Dip.

And your committee further report, that the blood stallion "Princeton," entered by Mr. RUBLE, of Beloit, was, in our opinion, the best stallion of his class on exhibition; but from the fact of his not having been kept for stock the past season, we are not warranted in awarding him a premium.

The trotting stallion "Waterloo," deserves special commendation, but could not be awarded a premium in consequence of having been improperly entered.

And the young stallion of the breed called the "Long Island Black Hawk," owned by W. P. BENTLEY, of Dane county, is entitled to a like favorable mention, but was not allowed to compete with the "Morgan Black Hawks" for premiums.

The following is the pedigree of Best Blood Stallion, as furnished by Mr. Ruble:

Buckshot was sired by Scrugg's Medock; g sire Kentucky Medock; g g sire American Eclipse. Dam of Scrugg's Medock, sired by Sir Archer; g sire old imported Diomede; g dam by Director; g g dam by imported Financier; g g g by imported Certarious; g g g g dam by imported Clockfast. Dam of Kentucky Medock, Young Maid of the Oaks, sired by imported Expedition; grand dam, Old Maid of the Oaks. Dam of American Eclipse, Miller's Damsel, sired by imported Messenger.

Dam of "Buckshot," Rose Vertner, sired by Sir Lester—pedigree in Turf Register. Dam's Directory also in Turf Register. Was sired by Director, the brother of Virginian; his dam by Potomac; g dam by Jim Crack; he by imported Hart's Meadly; g g dam by imported Flinnap.

All of which is respectfully submitted.

B. R. HINKLEY, *Ch'n.*

HORSES OF ALL WORK.

Judges,..	F. C. CURTIS,	*Rocky Run.*
	HARVEY CONLEY,	*Madison.*
	DR. MAXWELL,	*Baraboo.*
	JACOB LOW,	*Lowville.*
	CHAS. BROWN,	*Waukesha.*

After a careful examination, your committee submit the following:

Best Stallion, 4 years and over, C. H. Phillips, Lake Mills,.....	$20
2d.....do.....do..... Wm. Berry, Honey Creek,.....	15
Best Mare, 4 years and over, A. A. Meredith, Madison,.....	10
Best pair matched Horses, J. C. Chandler, Madison.....	15
2d...do.....do ..... Sylvester Williams, Fitchburg,.....	10

HORSES OF ALL WORK—(continued.)

Best pair Draft Horses, N. Sheldon, Decatur,..... $15
Best single Draft Mare, Lewis Brown, Emmett,..... 10
Best Brocd Mare and Colt, J. B. Hart, Lake View,..... 10
2d.....do .....do Lyman Town, Fond du Lac co,..... 5
Best mare, 3 years old, J. V. Robbins, Burke,..... 10
2d....do.....do..... A. C. Douglas, Janesville,..... 5
Best Horse Colt, 2 years old, Geo. McDonald, Mackford,..... 7
2d.....do.....do..... A. N. Howard, Belleville, Dane Co.,..... 5
Best Horse Colt, 1 year, W. W. McLaughlin, Brooklyn, Green co.,..... 5
2d.....do.....do.. C. H. Phillips, Lake Mills,..... 3
Best Mare Colt, 2 years old, P. Baldwin, Oregon..... 7
2d.....do .....do..... L. B. Vilas, Madison,..... 5
Best Jenny, James McLeod, Lodi, Columbia co.,..... 10
Best 7 Colts, progeny of one horse, "Green Mountain Boy," Moses Chase, Sun Prairie, Dane co.,..... 20
Best pair working Mules, J. V. Robbins, Burke,..... 10
2d...do.....do..... L. D. Pritchard, Centre, Rock co.,..... 5
Best single Mule, P. M. Pritchard, Dane co.,..... 5

Owing to certain imperfections in the Premium List, we were not able to award premiums in some cases where the animals were highly deserving. On the other hand, we were obliged to withhold some premiums offered, because there were no horses of sufficient merit of the description named.

For example, we have awarded no second premium on either "Draft Horses," or "single Draft Horses," believing those exhibited to be unworthy.

Of Geldings, only one was found on exhibition, and he was unworthy of a premium.

No premium was offered for three years old stallions, but several were on exhibition—a very fine one by JOB MARSDEN, and another, nearly as good, by W. A. DRYDEN. The mare owned by Mr. DAVIS, to which we have awarded a premium, is a very fine animal, and fully justifies your Committee in marking her as a superior horse for all work.

J. V. ROBBINS exhibited one saddle horse remarkably wel trained, and a superior animal, worthy of special commendation ; but the Premium List authorized no premium. SHERMAN SNOW exhibited a "Fox Hunter" horse (a blooded stallion), claiming that he had been overlooked by the Committee, where he properly belonged. We considered him a good horse of that description. Respectfully submitted,

F. C. CURTIS, *Ch'n.*

TROTTING AND ROAD HORSES.

Judges,.. { B. R. HINKLEY, - - - *Summit.*
LEVI STERLING, - - *Mineral Point.*
EZRA BINGHAM, - - - *Koshkonong.*

Your Committee report the following time, as made by the several horses on trial, together with the awards:

STALLIONS—FIVE YEARS OLD AND OVER.

"David Hill," David Hill, ... 1 mile, 2.55.. $30
"Black Weasel," S. W. Cutler, ...do.. 2.56.. 20
"Green Mountain Boy," M. & N. Chase, ...do.. 3.05.. 10

STALLIONS—UNDER FIVE YEARS OLD.

"Henry Clay," Smith & Butolph, ... 1 mile, 3.12½ $25
"Little Thunder," M. McKenzie, ...do.. 3.29.. 15

GELDINGS AND MARES—SINGLE.

Gelding "Telegraph," H. Conley, ... 1 mile, 3.06.. $15
Bay Gelding, J. A. Ellis, ...do.. 3.15.. 10
Sorrel Mare, J. M. Learned, ...do.. 3.19.. 5

MATCHED TROTTING TEAMS.

Bay Mares, J. V. Robbins, ... 1 mile, 3.15.. $20
Grey Mares, Mr. Bradley, ...do.. 3.45.. 15
Grey Geldings, G. P. Delaplaine, ...do.. 3.47.. 10

The foregoing is correct, as reported by the time-keepers appointed by the Judges.

Respectfully submitted,

B. R. HINKLEY, *Ch'n.*

SHEEP.

Judges,.. { GUSTAVUS GOODRICH, - - *Raymond.*
F. D. WILD, - - - *Greenfield.*
C. A. LEWIS, - - - - *Windsor.*
S. L. SHELDON, - - - *Madison.*
A. G. LULL, - - - - *Oshkosh.*

The Committee on Sheep are unanimous in making the following awards and accompanying report:

SPANISH MERINOES.

Best Buck, over 2 years old, H. Hemenway, Whitewater, Walworth co., Engraving or $10
2d best Buck, over 2 years old, R. F. Graves, Randolph, Columbia co.,... 7
3d .....do.....do..... R. H. Walker, East Randolph, Col. co.,... 5

SPANISH MERINOES—(continued.)

Best Buck, 1 year old, H. Hemenway, Whitewater,..... $7
2d.....do.....do.....do..... 5
3d....do..... do.... R. F. Graves, Randolph, Columbia co., ... 3
Best 3 Buck Lambs, H Hemenway, Whitewater, ... 5
2d.....do..... H. B. Clark, Whitewater,..... 3
3d.....do..... R. F. Graves, Randolph,..... 2
Best 3 Ewes, over 3 years old, H. Hemenway, Whitewater,..... 10
2d....do.....do..... R. F. Graves, Randolph, Columbia co., ... 7
3d....do.....do..... J. T. Flint, Bristol, Dane co.,..... 5
Best 3 Ewes, 1 year old, H. Hemenway, Whitewater,..... 7
2d....do.....do.... H. B. Clark, ...do 5
3d....do..... ..do.... R, F. Graves, Randolph, Col. co., ... 3
Best pen Lambs, H. B. Clark, Whitewater, ... 5
2d.....do..... H. Hemenway,....do 3
3d.....do..... H. B. Clark,.....do 2

FRENCH MERINOES.

Best Buck, over 2 years old, J. Culver, Milton, ... Engraving or $10
2d....do.....do..... C. C. Olin, Waukesha,..... 7
3d....do.....do..... W. E. Sanford, Waukesha,..... 5
Best Buck, 1 year old and over,.....do.....do 7
2d....do.....d.....Giles Kinney, Whitewater,..... 5
Best pen Ewes, 2 years old, Pliny Clark, Montrose,..... 10
2d.....do..... do.... .. H. E. Coon, Palmyra, Jeff. co.,..... 7
2d best pen Ewes, 1 year old, Giles Kinney, Whitewater, Walworth co.,.. 5
3d.....do.....do.... H. E. Coon, Palmyra, ... 3
Best pen Lambs, Giles Kinney, Whitewater, ... 5

LEICESTERS.

Best Buck, 2 years old, Gilbert Worthley, Lagrange,.....Engraving or $10
2d ...do.....do..... E. J. French, Decorah, Columbia co , ... 7
3d best Buck, 3 years old, L. Rawson, Oak Creek, ... 5
Best Ewes, 2 years old, O. G. Ewing, Lagrange, ... 10
2d....do.....do.... E. J. French, Decorah, Columbia co., ... 7
Best pen Ewes, 1 year old, O. G. Ewing, Lagrange, ... 7
Best pen Ewe Lambs, ...do.....do..... 5
2d.....do..... E. J. French, Decorah, Columbia co., ... 3
Best pen Buck Lambs, O. G. Ewing, Lagrange,..... 5

SOUTH DOWNS.

Best Buck. 2 years old, A. G. Hanford, Waukesha,. .. ....Engraving or $10
2d... do.....do..... Wm. Woodward, Westport, Dane co., ... 7
3d....do.....do..... Simon Ruble, Beloit, Rock co., ... 5
Best pen Ewe Lambs,.....do.....do..... 5
2d.....do..... C. A. Johnson, Blooming Grove, Dane co.,..... 3
Best Buck, 1 year old, Luther Rawson, Oak Creek, ... 7

The exhibition of Sheep was very large, and contained many fine animals in their respective classes. In regard to Spanish Merino Sheep, we have as fine animals as can be found in the Union. A great deal of zeal is manifested by the breeders; and, in fact, more attention is paid to this breed at present, than any other. To Messrs. HEMENWAY, FLINT, GRAVES, WALKER, and others, much credit is due for their especial

manner of breeding; combining good carcass with long, even, and beautiful staple of wool. In the French class, the breeders do not seem to have that enthusiasm which is desirable in the breeding of the full blood animals; and, instead of progressing, they are not what they were a few years ago. In the long-wooled class, the Leicesters were the only ones represented, and some of them were very creditable to their owners; and your committee would recommend that this breed be kept as pure as possible; for they are of the opinion that crossing does not improve, but rather injures, their reputation as mutton Sheep. Of South Downs, we are sorry to say, there were no animals exhibited that would honor that very fine breed of Sheep; the most of them were more or less crossed with other breeds, thereby destroying that beauty of form and aptitude to fatten, for which they are so celebrated. Nothing can exceed the beauty of a pure bred South Down Sheep; and it is to be hoped that our own State will soon be fully up to the mark in this class of Sheep.

GUSTAVUS GOODRICH, *Ch'n.*

SWINE.

Judges,..	R. E. GILLETT, - - -	*Tomah.*
	JOHN GREENING, - -	*Mazo-Manie.*
	J. A. CARPENTER, - -	*Waukesha.*
	TYLER COLWELL, - -	*Lynde.*

The number of entries was fair, but not large. The Committee regret that there was no more competition in this department. We take great pleasure in noting some breeds worthy of attention by both stock-breeders and farmers in this State.

Mr. THOMAS CONNER, of Rutland, Dane county, exhibited a large breed, of good blood, imported from Canada; probably a cross of the Leicester and Yorkshire, and doubtless a profitable breed to raise, especially to cross with the Suffolks.

Mr. A. G. HANFORD and Mr. J. A. CARPENTER, of Waukesha county, exhibited fine Suffolks, and some very choice

specimens of the Essex breed, which are not large, but indicate pure blood and a good breed for early maturity.

Mr. J. V. ROBBINS, of Burke, Dane county, exhibited a fine lot of Suffolks, which are well bred; also some nice pigs of Mackey breed, a good variety, which originated in New England.

Mr. SIMON RUBLE, of Beloit, exhibited a very choice lot of Suffolks, which possess the sure evidence of pure blood and extra breeding.

Mr. J. R. WING and Mr. M. M. BROWN, of Trumbull county, Ohio, exhibited a large and very fine lot of pure Suffolks, just brought from that State.

Your Committee hold but one opinion as to the best breed for our Wisconsin farmers, *i. e.*, the Suffolks; and especially to cross with the more common and larger breeds.

The Suffolks *mature early*, *fatten early*, and make the first quality of pork. Therefore, no effort should be wanting to introduce this breed, for the certain improvement of this very important branch of stock-growing in our State.

The following are our awards:

ESSEX.

Best Boar, over 2 years old, A. G. Hanford, Waukesha,	$10
2d....do.....do..... Thomas Conner, Rutland,	5

SUFFOLKS.

Best Boar, 1 year old, Simon Ruble, Beloit, Rock co.,	7
2d....do.. 6 months old, J. A. Carpenter, Waukesha,	3
Best Sow and Pigs, Thomas Connor, Rutland,	10
2d.....do..... J. A. Carpenter, Waukesha,	5
3d Premium, cross Boar, 2 years old, J. W. Morse, Dane co.,	5
Suffolk Boar and Sow, J. R. Wing, of Ohio,	Dip.
M. A. Brown, Trumbull co., Ohio, for Sows and Pigs, Transactions, Certificate and	5
Breeding Sow and Pigs, D. Richardson, Discretionary,	Transactions.
1 pair Suffolk Boars, J. V. Robbins, Burke, Dane co., Dis.	Dip.
Mackey Boar, J. V. Robbins, Burke, Dane co., Dis.,	Trans.
1 pair Pigs, 4 months old, J. A. Carpenter, Dis.,	Dip.
1 pair Suffolk Sows, J. V. Robbins, Dane co., Dis.,	Dip.
1st premium for improved Leicester Breeding Sow, H. E. Coon, Palmyra,	10

Respectfully submitted,

ROBT. E. GILLETT, *Ch'n.*

POULTRY.

Judges,.. { E. A. TAPPAN, - - - *Prairie du Sac.*
JOSPH AXON, - - - *Poynette, Col. Co.*
CHAS. SMITH, - - - *Waupun.*

Best lot Shanghai or China Fowls, Chas. Blackwell, Waukesha,..... $2
Best lot Dorkings, J. A. Carpenter, Waukesha,..... 2
Best lot Java, Simon Ruble, Beloit, Rock county,..... 2
Best Poland spangled Hamburg, D. Fitch, Madison,..... 2
Best lot Turkeys, J. B. Britton, Madison,..... 2
Best lot Ducks, Daniel Palmer, Fitchburg, Dane county,..... 2
Best lot Pea Fowls, E. L. Bovee, Eagle,..... 2
Best lot Game Fowls, Chas. Oswin, Middleton,..... 2

The Committee on Poultry, respectfully represent that they are wholly unable to report premiums according to the published list, from their ignorance of the nice distinctions that have been established by venders and speculators in poultry to gull the public and create their sales. They have therefore adopted the term Shanghae or Shanghai, as the best known and more indicative of that long legged ungainly abortion that "John Chinaman" has made up from a cross of the great Malay and Bantam, probably, as these are the only two original breeds of fowls the Creator ever put upon the earth; the rest are man's invention. There is no more reason to suppose that there was a wild original of each of the different varieties of domestic fowls than of the other domestic animals—Durham or Devon Cattle, Leicester or Bakewell Sheep, or Berkshire, Essex, or Woburn Swine. It is a conceded fact, that all the different varieties of Domestic Fowls, known as Brahmas Chittagongs, Cochin China's, &c., are one and the same thing.

In accordance with the above, the committee are unanimous in reporting.

In conclusion, your committee would suggest to farmers and others, through the Society, that domestic poultry is as likely to run *out* by breeding *in* as any other class of animals, and consequently their interests would be promoted by crossing judiciously.

EDWARD A. TAPPAN, *Ch'n.*

PRODUCTS OF THE EARTH.

FIELD CROPS BY THE ACRE.

As will appear by the Minutes of the Executive Committee Meeting of February 7, 1859, the number who entered Field Crops was but fifteen; of whom only four reported results, and thus actually became competitors for the premiums offered. The awards were as follows:

Best one acre wheat, (Fife, 34 bushels,) Luther Landon, Waupun,..... $10
2d.....do.....(Club, 3 1-4 bushels,) Gustavus De Neveu, Fond du Lac,..... 5
Best one acre Corn, (Flint, 90 bushels, shelled,) Luther Landon, Waupun, 10

The other competitors reported such small crops that the Committee could not award them premiums without too great a sacrifice of state pride. It is true, that the season was not very favorable to large yields of most of the crops upon which premiums were offered, but after all proper allowance has been made, both those which were reported and those which were not, are a reproach to our farmers. The Committee have unshaken confidence in the capabilities of our soil, and the favorableness of our climate for the production of most of the staple crops of the country, and they sincerely hope that subsequent reports will redeem Wisconsin from the disgrace of producing results inferior to those of some of the other States whose natural advantages are greatly inferior to hers.

FARM PRODUCTS, AND GARDEN VEGETABLES.

Judges,..
- SIMON RUBLE, - - - *Beloit.*
- M. ARIES, - - - - *Lodi.*
- J. J. LEVI, - - - - *Edgerton.*
- R. ARUNDELL, - - - *Dodgeville.*
- R. C. FIELD, - - - *Richland City.*

The Committee on Farm Products made no other report than the following list of awards:

Best sample White Winter Wheat, R. Boyce, Oregon,..... ..... $3
2d.....do.....do.....D. Vernon, Middleton,..... 2

FARM PRODUCTS AND GARDEN VEGETABLES—(continued.)

Best sample Spring Wheat, G. B. Salmon, Sec'y St. Croix and Pierce Co. Agricultural Society,..... $3
2d best sample Spring Wheat, Benjamin Piper, Madison,..... 2
Best sample Rye, G. B. Salmon, Sec'y St. Croix and Pierce Co. Ag. Soc.. 2
2d .....do.....L. S. Palmer, Baraboo,..... 1
Best sample Oats, A. J. Niles, Madison,..... 2
2d .....do.....John Rutherford, Verona,..... 1
Best sample Buckwheat, S. Hook, Oregon,..... 2
2d.....do.....do.... A. J. Niles, Madison,..... 1
Best sample Timothy Seed, Charles Chipman, Springfield,.... 3
2d.....do.... do..... Edwin Spooner, Fitchburg,..... 2
Best Pumpkins, H. E. Hardy, Burke, dis..... .....Trans.
Best Cabbage, A. J. Mitchell, Burke,..... 1
2d.....do...John Lewis, Madison,.....50c
Best Carter Potatoes, John Rutherford, Verona Corners,..... 2
2d.....do.....John Tinker, Clinton,..... 1
Best Mercer Potatoes, Nicholas Haight, Blooming Grove,..... 2
2d.....do.....do..James Terwilliger, Fitchburgh,..... 1
Best Tomatoes, A. S. Wood, Madison,..... 2
2d.....do....H. R. Leach, Eagle,.....50c
Best Carrots, John Rutherford, Verona..... 2
2d.....do..H. R. Leach, Eagle,....,..... 1
Best Pink Eye Potatoes, John Rutherford, Verona,..... 2
2d.....do.....do.....W. B. Knapp, Burke, discretionary,..... 1
Best Onions, H. P. Hall, Burke,..... 2
2d.....do..G. B. Salmon, Sec'y St. Croix and Pierce Co. Ag. Soc..... 1
Best Parsnips, John Rutherford Verona... 1
2d.....do....H. P. Hall, Burke,.....50c
Best White Beans, R. S. Garter, Ripon,..... 2
2d.....do.....H. P. Hall, Burke,..... 1
Best sample Barley, A. B. Devoe, Pleasant Spring,..... 2
2d.....do..... John Rutherford, Verona..... 1
Best Squashes, Levi B. Vilas, Madison, dis..... .....Trans
Best early Potatoes, A. G. Hanford, Waukesha,..... 2
Best show of Beets, John Rutherford, Verona,..... 1
Best sample Seed Corn, James Terwilliger, Fitchburg,..... 2
2d.....do.....do....A. F. Spooner,.....do..... 1
Best Egg Plant, E. C. Spink, Madison,..... 1
2d.... .do.... M. Hallis,.....50c
Best Earth Almonds, (chuffas) C. R. Chipman, Springfield, dis.....Trans
Best varieties Potatoes, W. B. Knapp, Burke, dis.....Trans
Best show Garden Seeds, A. J. Mitchell, Burke,..... 5
2d.....do.....do.....C. Chipman, Springfield..... 3
Best Winter Radishes, Benjamin Piper, Madison.. 1
Best Summer Radishes, J. R. Hiestand, Blooming Grove,..... 1
Best show Hungarian Grass Seed, J. L. Marsh, Muscoda, dis.....Trans
Best Peas, Charles Chipman, Springfield..... 2

SUGAR CANE SUGAR.

Best sample Sugar, C. A. Johnson, Blooming Grove, Dane county,..... $25
2d best....do..... H. H. Wilds, Fort Atkinson, Jeff. co..... 10
3d best....do.....R. P. Main, Oregon, Dane county,..... 5

CANE SYRUP.

Best sample syrup, O. P. Dow, Palmyra, Jefferson county,..... 15
2d best....do.....E. F. Weld,....do.....do.....do..... 10
3d best....do.....C. A. Johnson, Blooming Grove, Dane county,..,..... 5

SWEET POTATOES.

Best sample, A. Bovee, Eagle, Waukesha county,....one barrel Seed Potatoes.
2d best..do. W. H. Hayes, Palmyra, Jefferson co., ...⅔.....do.....do
3d best..do. Henry Turvell, Madison,..... ...⅓.....do.....do

DRIED PEAT.

Best specimen Peat, ½ cubic yard, F. C. Curtis, Rocky Run,..... 10
2d best..do.....do.....do.....P. M. Perkins, Racine county,..... 5

STATEMENT OF H. H. WILDS.

I cut my cane on the 19th of September, and took the whole of the ripe stalks and ground in a mill made with three wooden rollers. I strain the juice obtained, through a flannel cloth, twice; boil over a slow fire in an iron vessel, but before boiling, put a teacup full of strong lime water into sufficient juice for twenty pounds of sugar, and skim the boiling juice as long as any green scum rises. I then set it off and let it stand four hours; then turn the juice off till the sediment begins to appear, and strain the juice twice as before. Next I mix one table-spoonful of saleratus with half a tea cup full of new milk and add to the above quantity of juice; stir the whole while heating, and skim as long as any scum rises; boil slowly until by dipping in a spoon and then dipping it quickly into cold water it will form a wax in the spoon. It is now in a condition to become sugar. I make my syrup in the same way, except that I do not peel the stalks, and do not boil the juice as much the last time.

H. H. WILDS.

FORT ATKINSON, Jefferson County, Wis.

STATEMENT OF E. F. WILDS.

The cane was raised on sandy loam, the second crop after breaking, and without manure. The land was plowed in the spring, ridged and planted four feet each way. Immediately after being ridged, which was about the 20th of May, cultivated and hoed it twice; and, as nearly as I could estimate, it would yield one hundred and twenty-five gallons of syrup per acre. I think the above amount is all that can be safely depended upon, although in some localities, and under more favorable circumstances, two hundred gallons may be realized. The process of the manufacture of the syrup exhibited by me, is as follows:

After the cane had been cut, stripped of its leaves, and passed through a mill, the juice was strained through a coarse cloth and put into a copper boiler. I then added the whites of two eggs well beat up, to one tea cup full of strong lime

water, and stirred the mixture with six and one half gallons of sap, and set the kettle over the fire until brought to a boil, when a thick green scum collected on the surface. This I immediately removed (in the meantime taking care to prevent its boiling too fast) and continued the process until the scum ceased to rise, and the juice was reduced to one-half of its original quantity; then strained through a flannel cloth while yet hot, when it was again put over the fire and boiled until reduced to the consistency of syrup; of which it made one gallon.

I may be permitted to add, that good molasses may be made even after the sap has soured, by neutralizing the acid with lime water; and that cane cut, stripped and put under cover, in a cool dry place, may be kept good until wanted.

For the cleansing process I would use a cauldron, but for the evaporation, shallow pans. Very respectfully,

E. F. WILDS.

FRUITS.

WISCONSIN APPLES.

Judges,..	GUSTAVUS DE NEVEU, - -	*Fond du Lac.*
	O. P. DOW, - - -	*Palmyra.*
	RUSSELL CHENEY. - - -	*Emerald Grove.*

The Committee on Fruits report that the exhibition was very large and beautiful, completely covering the tables which had been provided, (and went around the whole of one of the tents), and large spaces left by the Dane County Horticultural Society, in the center.

This Tent, if we are to judge by the immense crowd constantly filling it, seemed to be one of the great centers of attraction, and indeed it is no wonder that it should have been so. In quality and beauty as well as in quantity of fruit, the exhibition was far superior to what your committee had dared to anticipate; showing conclusively, that in spite of repeated failures, we need not despair of seeing plenty of good fruit in our noble State.

Your Committee have been greatly perplexed at times to decide justly to whom the palm of merit belonged. They have, however, finally decided upon the following awards:

APPLES—BEST SEVERAL VARIETIES.

Best and greatest variety Apples, J. C. Plumb, Lake Mills,..... ..... $10
2d..... do .....do.....J. French, Madison,..... 7
3d. .....do.....do.....W. A. Pierce, Pierceville, Dane county, 5
Best ten varieties, W. M. Bartholomew, Lodi,..... 5
2d.....do.....John McWilliams, Fitchburg, Dane county,..... 3
3d.....do.....Thos. P. Turner, Melendy's Grove,..... 2
Best five varieties, J. B. Walbridge, Baraboo,..... 3
2d.....do.....James Knight, Markesan,... 2

FALL AND WINTER APPLES.

Best show Autumn Apples, A. G. Hanford, Waukesha,..... 10
2d.....do..... do.....G. P. Peffer, Pewaukee,..... ... 7
3d.....do.....do.....Oliver Gibbs, Wheatland,..... 5
Best show Winter Apples, O. Ellsworth, Lake..... 10
2d..... do .....do.....G. De Neveu, Fond du Lac,..... 5
3d.....do.....do... .A. B. Smith, Lake Mills,..... 3

GRAPES.

Best and greatest variety, (20) Isaac Atwood, Lake Mills,..... ... 5
2d.....do.....do.....Charles Hanford, Emerald Grove,..... 3
3d .....do.... .do. ...Colby & Willey, Janesville,..... 2

PEARS.

We deem it but justice to state that H. Crocker, Esq., had altogether the best display of pears on the table, but the gentleman brought them only on exhibition, and not having entered them for competition, the Committee tender him the compliments and thanks of the Society. His collection is large and splendid enough to satisfy the epicure as well as the lover of the beautiful; it was admired and praised by all beholders.

We request that a Diploma be granted to Mr. Crocker.

Your Committee award as follows :

Best and largest variety, John G. Kanouse, Cottage Grove, Dane county,.. $7
2d.....do.....do.....Chas. Gifford, Milwaukee,..... 5
3d.....do.....do.....J. C. Gilbert, Pleasant Prairie,..... 3
Best two varieties, Colby & Wiley, Janesville,..... 5
2d .....do.....Geo. P. Peffer, Pewaukee,..... 3
3d.....do.....Thos. Howland,....do..... 2

PLUMS.

Owing to the season being far advanced, the display of this delicious fruit, a fruit which is easily raised and abundant in our State, was rather meagre.

Your Committee have awarded only two premiums under this head :

Best show of Plums, Giles Kinney, Whitewater,..... $5
2d.....do.....G. Peffer, Pewaukee,..... 3

Col. H. Crocker exhibited two varieties, the Jefferson & Coe's Golden Drop, which were as fair as could be.

QUINCES.

There were no Quinces on exhibition: here the terrible effects of the winters of 1856–57, are perceivable.

PEACHES.

Only a few samples exhibited or entered. We award:

Best show Peaches, Luther Rawson, Oak Creek,..... .... $5
2d.....do..... G. P. Peffer, Pewaukee,..... 3

We reluctantly conclude, that for the present, we cannot rank this delicious fruit, the Peach, as one which can be successfully raised in our State in open culture.

MELONS.

Best Ice Cream Water Melons, J. R. Hiestand, Blooming Grove, Dane co.,.. $2
Best Black Spanish....do.... ...do.....do.....do..... 2
Best Long Island.....do.....do..... ...do.....do..... 2
Best Musk Melon,.....do..... do..... .do.. Dip.
Best show of Melons,.....do.....do.....do..... 3
Best Mountain Sprout..do....Geo. T. Brown,.....do.....do..... 2
2d best Ice Cream Water Melon, J. C. Plumb, Lake Mills,..... 1
Best and greatest variety of Fruits, of all kinds, raised by exhibitor, G. P. Peffer,.....Dip. and 10

Before concluding this Report, the Committee feel it their duty to remark that a large quantity of very handsome seedlings were upon the tables. Probably from one quarter to one third of the apples on exhibition were seedlings, and not distinguishable in appearance, and as your Committee can certify, scarcely distinguishable in *taste*, from the best grafted varieties.

The greatest display of seedlings was that of J. French, Esq., of Madison, who had no less than 69 varieties of good looking seedlings upon the tables, some of them both in look and flavor deserving of propagation.

But there was one seedling exhibited by Mr. Peter Parkison, of LaFayette county, which, in our opinion, was the handsomest Apple of the Fair, it is called the "Parkison Seedling."

The Chairman of your Committee had also some pretty fair seedlings, but his well known *modesty* prevents his alluding to them.

Luther Landon, of Marquette, deserves notice for a fair lot of Apples.

Mr. H. J. Starin, of Whitewater, had a magnificent collection of charming Apples, his display was equal to the best. We consider Mr. Starin fully entitled to a Diploma.

All of which is respectfully submitted by your Committee.

GUSTAVUS De NEVEU, *Ch'n.*

FLOWERS.

Judges,.. { Mrs. E. S. Carr, - - - - *Madison*,
Mrs. E. W. Edgerton, - - *Summit*,
Mrs. W. Hughes, - - - - *Janesville*.

PROFESSIONAL.

Best variety of Dahlias, Colby & Willey, Janesville,.....	$3
2d best variety Dahlias, A. G. Hanford, Waukesha,...	1
Best collection Verbenas, Chas. Gifford, Milwaukee,.....	3
Best 12 varieties...do.....do.....do.....	2
2d best Verbenas, A. G. Hanford, Waukesha, dis.,.....	1
Best Pansies,. .....do.....do.....	1
Best Round Bouquet, Chas. Gifford, Milwaukee,.....	1
2d best.do ...do.....A. G. Hanford, Waukesha, ...50c	
Best Flat Boquet.....do.....do.....	1
Best Pyramid Boquet, Colby & Willey, Janesville,.....	1
Best quality and variety roses, Colby & Wiley, Janesville,.....	3
Best and greatest varieties of all sorts of Flowers, raised by exhibitor, Colby & Wiley,.....Dip. and	5
Best variety Cut Flowers, Colby & Wiley.....	3

AMATEUR.

Greatest variety Green House Plants, J. G. Knapp, Madison,.....	3
Seeding Dahlias, from seed of 1857,.....do.....do.....	3
Best display Cut Flowers, Mrs. H. J. Starin, Whitewater,.....	2
Best Basket Flowers,.....do.....do.....	2
Best variety Wild Flowers,.....do.....do.....	3
Best variety Verbenas,..... do.....do.....	2
Best variety Pansies,..... .....do.....do.....	2
Best Seedling Pansies, Dr. John Favil, Madison, dis.,.....	1
Best Pyramidal Boquet, Mrs. H. J. Sartin, Whitewater,.....	5
2d best..do.....do...Mrs. W. P. Towers, Madison,.....	2
Best Vase Flowers, Mrs. H. J. Starin, Whitewater,.....	2
2d best Vase Flowers, Mrs. H. K. Lawrence, Madison, dis.,.....	1
Best Flat Boquet, Mrs. W. P. Towers, Madison.....	2
2d best Flat Boquet, Mrs. H. J. Starin, Whitewater, dis.,..... .50c	
Best Boquet, Crested, Amaranths, Mrs. S. M. Van Bergen, Madison,.	1
Best display, quality and variety roses, C. James, Milwaukee, } Best 12 named sorts roses,..... }	3
Best specimens of Dahlias, Miss Lizzie McDonnel, Madison, dis.,.....	1
Best Herbarium, T. J. Hale,..... .....Dip.	
Best Floral Design, Mrs. W. P Towers, Madison, beautiful in design and execution, and highly artistic,.....	3

The Committee desire to notice, especially, a very fine collection of Seedling Dahlias, exhibited by J. G. Knapp, several Perfect Dahlias by J. T. Clark, (these were not entered,) also, Asters, by the same exhibitor, which, had they been entered, would have taken the premiums, fine specimens of Salpiglossus by A. G. Gridley, and a fine collection of Dahlias, by J. Belter Gardner, Milwaukee, which were not entered for competition.

Respectfully submitted.

MRS. E. S. CARR, *Ch'n.*

DAIRY AND HOUSEHOLD PRODUCTS.

BUTTER, CHEESE, BREAD, CAKE, ETC.

Judges,.. S. B. NEWCOMB AND WIFE, - - *Whitewater.*
DR. JOHN TINKER AND WIFE, - *Clinton.*
WM. A. PIERCE AND WIFE, - - *Pierceville.*

The Committee on Dairy and Household Products ask leave to report the following list of awards of premiums, with accompanying statements of successful parties, as to the mode of manufacture :

Best Butter made in June, H. J. Benson, Westport, Book and set spoons or $10
2d.....do.....do.....John Jaquish, Ithica, Richland county,..... 7
3d..... do.....do.....A. D. Adsit, Deerfield,..... 5
Best Butter made at any time, John Porter, Mazomania, Dane county, Book and Set Spoons, or..... 7
2d best Butter made at any time, Wm. A. Pierce,..... 5
Best 3 Cheeses, H. B Trowbridge, Burlington,..... 10
2d.....do....Milo Jones, Fort Atkinson,..... 7
3d.... do... Orin Rusk, Mazomanie,..... 5
Best single Cheese, O. Rusk, Mazomanie,..... 3
2d best do....do..Milo Jones, Ft. Atkinson,..... 2
Best Cheese, small dairy, P. R. Waterman, dis..... 3
2d best..do....A. D. Adsit, Deerfield, dis.....Trans. 1
Best Bread, yeast rising, Mrs. J. B. Hart, Lake View,..... 2
do....do...salt....do..Mrs. J. E. Mann, Fitchburg,..... 2
do Graham Bread, Mrs. O. P. Dow, Palmyra,..... 2
do Corn Bread, Mrs. C. A. Johnson, Blooming Grove,..... 2
do Sponge Cake, Mrs. H. A. Tenney, Madison,..... 2
do Fruit... do.....do.....do..... 2

BUTTER, CHEESE, BREAD, CAKE, ETC.—(continued.)

Greatest variety of Bread and Cake, Mrs. G. P. Peffer, Pewaukee,..... $5
Best specimen of Plain Cake, Mrs. D. S. Curtiss, Madison,..... 2
do Crackers, Mrs. O. P. Dow, Palmyra,..... 2
do Cookies,.....do ....do..... 2
do Cake made with Sorghum Molasses, Mrs. O. P. Dow, Palmyra,..... 2
Specimens Bakery, (professional) S. H. Cowles, Madison,.....Dip
Assortment of Cakes, &c., Mrs. L. Bird, Madison, adjudged very fine by the Committee,.....Certificate of Excellence

JUVENILE LIST.

Best Graham Bread, Miss Niles, Madison,..... $2
do White Bread, S. E. Highman, Fitchburg,..... 2
do Sponge Cake, Miss Ann E. Tenney, Madison,..... 2
do Gingerbread, Miss L. J. Peffer, Pewaukee,..... 2
do Gold and Silver Cake, Miss F. A. Main Madison, dis..... 1
Cakes called "Nothings," Miss Peffer, Pewaukee, (8 years old) dis..... 1

PREMIUM BUTTER—STATEMENT OF JOHN PORTER.

Number of cows kept on my farm in June, 32, and in October, 35. The mode of keeping them as follows :

In summer, grazing on the prairie ; in winter, stabling them. The stable is 57 feet long, 21 feet wide, 7 feet high, divided by an alley 7 feet wide, with a boarded floor for feed. (The stable accommodates 38 cows.) The cows stand on each side of the alley, facing each other, enabling them to feed all from the boarded alley or manger. The stable is ventilated by five windows on each side, and there is a double door at each end of the alley, so that the upper half of the doors may be left open for ventilation when necessary.

The cows are fed on warm feed, consisting of bran, shorts and tailings. Experience proves that the same feed given warm in cold weather, will produce one fourth more milk, than the same feed given cold.

The milk is set in pans until it becomes thick ; the cream is then taken off, and immediately churned each day; if too cold, hot water is poured into the churn whilst churning. If too warm, cold water is poured into the churn until the right temperature is obtained. A stove is set in the cellar in winter, spring and fall, so that the milk may become thick in at least 36 hours.

The butter is freed from the milk by a common hand ladle. It is taken from the churn and rinsed or worked in cold spring water, then salted with Ashton salt, and set by until next day; then thoroughly worked and packed.

Injurious effects have occurred to the butter by using the common small sacks of salt. JOHN PORTER.

MAZOMANIE, Dane Co., Wis., Oct. 5, 1858.

PREMIUM CHEESE—STATEMENT OF MRS. H. B. TROWBRIDGE.

The cheese we offer for premium, was made in the town of Burlington, Racine county, on the farm known as the "Perkin's Dairy Farm." The cheese was made from the milk of thirty-five cows, in the month of July, and kept in a dry, airy room, turned over every day, and well rubbed, oiled, with oil made from the cream that rises on the whey.

We make our cheese every day, without the addition of any cream, and all of them are made as near alike as we can make them, (that is) we make them all as well as we know how—we use no paint of any kind about the cheese.

We consider the rennet as one of the most essential parts of giving a good flavor to cheese; therefore great care is requisite to keep it sweet. We use calves' rennet, and get most of ours from the butchers, which are filled with salt, and dried. We soak them a day or two, in clear water, then add more salt than will dissolve, use the smallest quantity that will change the milk to cheese, in from thirty to forty-five minutes. Our process of making is this: We have a zinc vat, into which we strain the evening milk; this vat is enclosed in a wooden one capable of containing near twenty pails of water between the two, which we fill to cool the milk, in warm weather. The cream we take from the evening milk, in the morning, (to make butter for family use,) then the new milk is added, and it is ready for the rennet; no warming in hot weather. When the milk becomes well coagulated, we cross it each way with a wooden knife; let stand fifteen or twenty minutes, or till the whey commences to separate from the curd, then with the skimmer carefully cut it very fine, to prevent mashing—let stand a few minutes, or till the curd settles and the whey rises clear—then dip off the whey, and warm over a gentle fire, cutting the curd again with the skimmer; dip off again and add the warm whey—which process we continue till the curd is hard enough to squeeze between the hands and not mash. We then dip into a cloth strainer to drain, and it is ready for the salt which we rub in with the hands carefully, to not mash it, or the whey that presses out will be white, or milky, and we lose the best part of the cheese. We use about half an ounce of common barrel salt for a pound of dry cheese. We use the screw press, and let the cheese remain therein long enough to become solid, then turn into a fine linen cloth; let press twenty-four hours; oil with the oil hot; and bandage the rim with thin cotton cloth.

MRS. H. B. TROWBRIDGE.
MRS. MARY J. TURNER.

BURLINGTON, Wis., Oct. 1848.

PREMIUM CHEESE—STATEMENT OF MILO JONES.

This cheese was made July last, from the milk of 34 cows, at two milkings, with no additions of cream. Rennets prepared with soaking and rubbing in good brine made with the best dairy salt, and just enough used to bring the cheese in thirty or forty minutes; pressed twenty-four hours in lever press; bandaged and dressed with oil made from whey cream; turned and dressed once a day.

MILO JONES.

FORT ATKINSON, Oct., 1858.

DELICACIES.

Judges,.. { MRS. O. P. DOW, - - - - *Palmyra*,
MRS. D. S. MILLS, - - - - *Troy*.
MRS. A. L. DOOLITTLE. - - - ———

Your Committee on Delicacies would report, that there were on exhibition a large number of varieties of articles of this and of very superior quality. After *much tasting* and a careful inspection we have awarded the premiums as follows:

PRESERVES.

Greatest and best variety of not less than 10 sorts, Mrs. J. G. Knapp, Madison,..... $5
Best Apple Preserves, Mrs. J. Tinker, Clinton,..... 1
Best Peach.....do.....do.....do..... 1
Best Strawberry. do.....do.....do..... 1
Best Gooseberry.do...Mrs. H. J. Starin, Whitewater,..... 1
Best Currant....do.....do.....do..... 1
Best Cherry .....do.....do.....do..... 1
Best Plum ....do...Miss F. A. Main, Madison,..... 1
Best Tomato .....do...Mrs. J. Tinker, Clinton, ... 1
Best Pear .....do...Miss F. A. Main, Madison,..... 1

JELLIES.

Best and greatest variety, A. S. Wood, Madison,..... 5
Best Apple Jelly, Mrs. N. Haight, Blooming Grove,..... 1
Best Peach..do..Mrs. H. J. Starrin, Whitewater, ... 1
Best Apple Butter, Mrs G. P. Peffer, Pewaukee,..... 1
Best Tomato..do.....do..... ..do..... 1

PICKLES.

Best and greatest variety, Mrs. E. M. Williamson, Madison,..... 5
Best Cucumber, Mrs. C. C. Olin, Waukesha,..... 1
Best Apple, Mrs. H. J. Starin, Whitewater,..... 1

From Mrs. Peffer, we have the following :

STATEMENT CONCERNING APPLE AND TOMATO BUTTER.

APPLE BUTTER.—"To nine pounds of apples, pared and cored, part of them sweet and part sour, I added three quarts of Sorghum Syrup and one spoonful of ground Cinnamon ; then stewed in a brass kettle, stirring the whole time with a ladle until the butter was thick enough for the ladle to stand up in it."

TOMATO BUTTER.—"Used one gallon of Sorghum Syrup to twenty-five pounds of Tomatoes ; stewed the tomatoes first in a little water and strained through a sieve to remove the seeds ; then added the syrup and stewed the same as Apples ; seasoning with lemon peel."

Respectfully submitted.

MRS. O. P. DOW, *Ch'n.*

MACHINERY, MANUFACTURES, AND WORKS OF ART.

FARMING IMPLEMENTS.

Judges,..	JESSE VAN NESS,	*West Point, Col. Co.*
	W. H. PRENTICE,	*Sheboygan Falls*,
	A. D. CORNWALL,	*Salem, Kenosha Co.*,
	S. W. FIELD,	*Fitchburg*,
	MARCELLUS FINCH,	*Ft. Atkinson.*

This committee made no report other than the simple awards, but made special commendatory mention, in connection therewith, of Winchester & DeWolf 's "assortment of plows," Wm. Bedford's "lumber wagons," Thos. Cheynoweth's "single harness," and James Cullum's "corn brooms."

The following premiums were awarded :

Best Sod Plow, heavy soil, Winchester & DeWolf, Whitewater, Walworth county,.....Cert.
Best Sod Plow, light soil, H. Mitchell, Racine,.....Cert.
Best Crossing Plow, Winchester & DeWolf, Whitewater, Walworth co., Cert.
Best Deep Tiller and Sub-soil Plow, Winchester & DeWolf,.....Cert.
Best assortment of Plows, with prices;...do.....do. .....Dip.
Best Corn Cultivator, J. F. Benton, Beloit,..... ... $3

FARMING IMPLEMENTS,—(continued.)

Second best Corn Cultivator, Wright & Cash, Whitewater,..... $2
Best Horse Hoe, O. Holden, Chicago,.....Dip.
Best Potatoe Digger, Wright & Cash, Whitewater,..... 2
Best Wheel Cultivator, S. R. Tracy, Newark, N. Y.,.....Dis. Dip.
Best Roller for general use, J. P. W. Hill, Burke,..... 5
Best Farm Wagon, L. Morse, Fond du Lac.....Dip. or 5
Second best Farm Wagon, F Pulse, Fond du Lac,..... 3
Best Fanning Mill, H. F. Cahoon, Rochester, Racine county,.....Dip.
Second best Fanning Mill, S. Moulton,..do....do.....do..... 3
Best Churn, W. H. Tambling, Berlin,..... 3
Second best Churn, G. N. Willis, Oregon,..... 2
Best Washing Machine, Wm. McClure, Janesville,..... 2
Second best Washing Machine, W. H. Tambling, Berlin, Marquette county, discretionary,.....Trans.

Best Horse Rake, E. W. Skinner, Madison, (Stoner's patent)..... 3
Second best Horse Rake, L. C. Halstead, Wauwatosa,..... 2
Best Corn and Cob Crusher, D. F. Vanlieu, Aurora, Ill., discretionary, Dip.
Second best Cob and Corn Crusher, W. D. Bacon, Waukesha,..... 5
Best Fire Proof Safe, Schumacher & Johnson, Milwaukee,.....Cert.
Best Bank Lock, ...do.....do.....do..... .....Cert.
Best Ox Yoke, T. T. Proctor, Ft. Atkinson,..... 2
Best Single Harness, Thos. Chenoweth, Madison,.....Dip. and 3
Second best Single Harness, Robert McDowell, Union Grove,..... 2
Best dozen Brooms, F. C. Curtis, Rocky Run,..... 2
Best dozen Pails, Daggett & Rice, Milwaukee,..... 2
Best dozen Half Bashels, Daggett & Rice, Milwaukee,..... 2
Best dozen Tubs, ...do.....do.....do..... 2
Best Wheel Barrows, J. Stewart, Verona, discretionary.....Trans.
Best Clothes Hanger and Dryer, and Eaves Trough Supporter, W. R. Dana, Plattsburg, N. Y.,.....Cert. of excellence.

Respectfully submitted.

JESSE VAN NESS, *Ch'n.*

OPERATIVE MACHINERY.

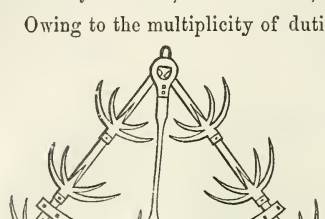
Judges,.. { IRA MILTIMORE, - - - - *Janesville*,
G. MONTAGUE, - - - - *Geneva*,
I. E. BROWN, - - - - *Madison*,
JOSEPH POWERS, - - - - *Hebron*,
S. H. COE,
P. H. PRAME, - - - - *Dartford*.

Best Drill and Seeding Machine, A. Stoner, Milwaukee,..... $5
Best Family Sewing Machines, F. L. Raynor, Janesville,.....Dip. and 5
Best Sewing Machine, shop work, O. B. King, Milwaukee,.....Dip.
Best Self Raking Reaper and Mower combined, E. W. Skinner, Madison, Palmer & Williams' patent,.....Dip.
Best four horse Self Raking Reaper and Mower combined, Seymour & Morgan's patent, S. L. Sheldon, Madison,.....Dip
Best Self Raking Reaper, W. P. Flagg, Bloomington, Ill.,..... .....Dip
Best Manny's Reaper and Mower, A. C. Davis, Madison,.....Dip. and 8
2d best Reaper and Mower, G. T. Roberts, Racine..... 5
..do.....do.....do...S. L. Sheldon, Madison, discretionary,..... 5
..do...Iron Reaper and Mower, Janesville Reaper Co., Janesville, Cert.
..do...Ohio Mowing Machine, A. C. Davis, Madison,.....Dip. and 5
Separator, H. A. Pitts, Chicago, 1st premium,..... 5
..do.....Wheeler & Ludlow, Janesville, 2d premium,..... 2
..do.....J. I. Case, Racine,..... .....Dip.
Best Horse Power and Sweep, J. I. Case, Racine,.....Dip. and 5
2d....de.....do....(climax,) Wheeler & Ludlow, Janesville,..... 5
Best Sugar Mill, (wooden,) Joseph Powers, Hebron..... 5
2d....do....do..and press, (wooden,) C. A. Johnson, Blooming Grove,.. 3
Best Iron Sugar Mill, I. E. Brown, Madison,..... 5
2d...do..... ..do.....Dean & Smith, Portage,..... 3
Best Corn Planter, Thos. Crane, Fort Atkinson,..... .....Dip.
2d best Index Corn Planter, horse power, Stephen Burrows, Whitewater,..... .....Trans.
Broadcast Seed Sower, J. Atwood, Briggsville.....Dip.
2d Horse Power, Broadcast Seed Sower, H. J. Sills, Arlington,..... 3
Best Grain Drill, Kuhn's, A. C. Davis Madison,.....Dip.
2d best...do.....S. R. Tracy, Newark, N. Y.,.....Trans.
Best Patent Clothes Dryer, Chas. Stephens, Palmyra,.....Dip.
2d best...do.....do.....L. B. Waterman, Chicago,.....Trans.
Best Portable Feed Mill, Wis. Wind Mill Co., Janesville,.....Dip. and 10
2d best Portable Grist Mill, no bolt, W. D. Bacon, Waukesha,..... 5
Best Huron mounted Grind Stone, Tibbits & Gordon, Madison,...Trans.
Best Chain Pump, Mott & Able, Brodhead,..... 5
Best Seeding Machine and Harrow combined, Fowler & Bacon, Fond du Lac,.....Trans.
Best Portable Steam Engine, Turton & Sercomb, Milwaukee,...Dip. and 20
Best Lightning Rods, James Pratt, Milwaukee,..... ....Dip
Best Variable Steam Engine Exhauster, Jones Patrick, Chicago, Gold Med.
Best Force Pump, (Boyes' patent,) D. W. Lewis, Janesville,.....Dip.
Best Siding Mill, W. H. Doane, Chicago, ... 5
Best show of Scales, Fairbanks & Greenleaf, Chicago,..... Dip. and 10
Best Iron Castings, dry mould, Wheeler & Ludlow, Janesville,..... 5
Best.....do.....green sand.....do.. .....do.....do..... 5
Best case Horse Shoes, David Carter,.....Dip.
Hanes' Illinois Harvester, J. J. Van Bracken, Janesville,.....Trans.
Best Corn Sheller, (Badger State,) L. S. Blake, Racine,.....Dip.
2d best Corn Sheller and Separator, Tibbits & Gordon, Madison,..... 2
Best Band Cutter and Self Feeder, S. D. Reynolds, Ogle county, Ill.,.... 3

OPERATIVE MACHINERY,—(continued.)

Best Knitting Machine, James Dawson & Son, Madison,.....Dip. and $5
Best Corn, Hay and Straw Cutter, by steam, G. B. Griffin, Madison,Dip. and 10
Best Tread Horse Power, W. D. Bacon, Waukesha,.....Dip. and 5
Best case Finished Brass Work, Walton & Son, Milwaukee, ... 5
Best Saw Mandrel, Walton & Son, Milwaukee..... 3
Best Cultivator Teeth, O. W. May, Madison,..... ..Trans.
Best Re-cut Files, Phelps Schley, Milwaukee,.....Dip.
Best Wind Mill, Wisconsin Wind Mill Co., Janesville, ...Dip. and 15
2d....do...do..J. M. May, Agent, Janesville, ... 10
Best Cider Mill, C. N. Stephens, Jonesville, Mich.,.....Dip.
Best Unfinished Brass Castings, Wheeler & Ludlow. Rock county,..... 5
Best model Improved Horse Power, Bird, Wright & Co.,..... .Dip.
Best Rotary Harrow, Orman Coe, Port Washington,. 3
Best Pump for drilled wells, Walter Peck, Rockford, Ill.,..... 3
Best Rotary Card Press, Atwood & Rublee, Madison,.....Dip.

Owing to the multiplicity of duties required, and the shortness of time allowed, your Committee have been unable to give that attention which the vast amount of machinery deserves, and consequently may have overlooked many important things. The foregoing awards were quite unanimously made.



COE'S ROTARY HARROW.

IRA MILTIMORE, *Ch'n.*

DOMESTIC MANUFACTURES.

Judges,.. { MARY A. C. HANFORD, - *Waukesha.*
P. E. CURTIS, - - - *Detroit, Mich.*
MARY M. GUNN, - - *Fox Lake.*
IRA BLOOD, - - - - *Burlington.*

Your Committee on Domestic Manufactures have examined the articles in Class D, No. 30, and have awarded premiums on the articles that we considered best, as seen below:

30 yards Wool Carpet, A. L. Mann, Fitchburg,..... ..... $4
1 pair Blankets, D. Palmer, Fitchburg,..... 2
2 pairs Socks,.....do.....do....dis.....Trans
Linen Cloth, A. D. Adsit, Deerfield,..... 2
Linen Diaper,....do.....do..... 1
Rag Carpet, Riley Swan, Cottage Grove,..... 3
Stockings, Chester Sutherland, Fitchburg,..... 1
10 yds Flannel, Mrs. S. J. Miles, Verona,.... 3

DOMESTIC MANUFACTURES,—(continued.)

Knit Woolen Shawls, Mrs. D. S. Curtiss, Madison, dis.....Trans and 1
Pair Gloves, knit on hook, Mrs. M. A. Chipman, Sun Prairie, dis..... 1
Wool Overcoat, Mrs. R. D. Thompson, Oakland, dis.....Trans and 1
Wool Cloak,.....do.....do..... 1
Gents' Shirts, Mrs. D. H. Wright, Madison,..... 2
Gents' Shirt, made by hand, Miss Mary B. Atwood, Madison, dis..... 2
Best case of Gents' Linen, Mrs. H. D. Filkins, Madison,..... .....Dip and 2
Rag Hearth Rug, Miss Martha Archibald, Waukesha,..... 1
Wool Mittens, Mrs. C. S. Lacy, Janesville,..... 1
Hearth Rug, Mrs. Mayer Friend, Madison,..... 1
Carpet Hearth Rug, Augusta Fiddler, Madison, dis..... 1
Pair Socks, Miss Mary B. Atwood, Madison, dis..... 2

JUVENILE LIST.

Best Patch Work Quilt, Miss C. C. Cunningham, Oregon,..... 3
2d.....do.....do...Miss Belinda Spencer, Springville,..... 2
1 piece Satinet, Miss S. Britts, Primrose, dis..... 3

We found many articles that had no tickets, owing, we presume, to the ignorance or carelessness of exhibitors.

Very few exhibitors certified when their articles were made. On the whole we have done all we could do under the circumstances, and hope that exhibitors, for the future, will be more careful and have their articles ticketed; and that the Superintendent will have articles of the same Class and number in the same place, for it is difficult to compare articles that are in different places. Respectfully submitted.

MARY A. C. HANFORD, *Ch'n.*

TEXTILE FABRICS, CLOTHING, ETC.

Judges,.. { EDWIN HILLYER, - - - *Waupun.*
T. C. SNOW, - - - ———
Miss MARY RIDDLE. - - *Beloit.*

Your Committee having examined the articles on exhibition, belonging to their department, have to report the following awards:

Best piece narrow Cloth, P. M. Perkins, Burlington, Racine county, Dip. and 3
Best..do..Blanketing. Jas. Dawson & Son, Madison,..... 5
Best..do..Cashmere Flannel P. M. Perkins, Racine county,..... 5
2d best.....do.....James Dawson & Son, Madison,..... ... 3
Best Ladies' Blanket Shawl, James Dawson & Son, Madison,..... 5
Best Knit Drawers and Shirts, James Dawson & Son, Madison,dis....Dip.
Best Men's and Boy's Clothing, Friend & Crawford, Madison,.....Dip.
Best Men's and Children's Hats and Caps, Geo. B. McGie, Madison,.Dip.
Best exhibition of Furs, G. B. McGie & Co., Madison,..... ....Dip.

PRINTING AND BINDING.

Judges,.. { W. H. Watson, - - - *Madison.*
John Hancock, - - - ———
H. A. Tenney, - - - *Madison.*

The Committee in presenting their report upon articles in Class D, No. 33, feel it to be due to themselves, as well as to the exhibitors, to say that from the crowded condition of the Fine Arts Hall, in which most of the articles were exhibited, as also from the insufficiency of light, they were unable to make an entirely satisfactory examination; but after spending some time on Wednesday afternoon, they adjourned to Thursday morning, in order to be able if possible, in better light, to do greater justice. They respectfully present the following as their awards on the articles exhibited.

No specimens of writing or printing paper were presented for their examination.

Best specimen Book Printing, Atwood & Rublee, Madison,..... $5
Best specimen Pamphlet Printing, E. & H. A Starr, Milwaukee,..... 3
2d best do.....do. .....do... Atwood & Rublee, Madison,. 2
Best specimen Handbill Printing, Atwood and Rublee, Madison,..... 3
2d best do.....do.....do..Charles Holt, Janesville,..... 2
Best Circular and Bill Heads, E. & H. A. Starr, Milwaukee,..... 3
2d best do.....do.....Atwood and Rublee, Madison,..... 2
Best specimen Card Printing, E. & H. A. Starr, Milwaukee,..... 3
2d best do.....do.. ..Atwood & Rublee, Madison,..... 2
Best specimen Velvet Card Printing, Atwood & Rublee, Madison, dis. Dip.
A full and well executed assortment of large Cards, Atwood & Rublee, Madison, dis..... .....Dip.
Best Blank Book Binding, H. Niedecken, Milwaukee,..... 3
2d best do.....do.....Strickland & Co., Milwaukee,..... 2

The Committee have met with considerable difficulty in deciding upon the award for the second premium above, and they desire to make special and honorable mention of a variety of Blank Book work, presented by Bliss, Eberhard & Festner, of Madison.

Best specimen Library Book Binding, Bliss, Eberhard & Festner, Madison, 3

Messrs. Atwood & Rublee presented a specimen of Binding, (the volume of Transactions of the Society,) which would entitle them to the 2d premium, but as the Committee report said volume for two premiums in this class, they leave the matter to the discretion of the Executive Committee.

Best Fancy Book Binding, Bliss, Eberhard & Festner, Madison,..... 3
2d best do.....do.....H. Niedecken, Milwaukee,..... 2
Best specimen Book Work, all in all, Atwood & Rublee, Madison,..... 7

It is proper that we should state that neither on Wednesday or Thursday were we able to find the specimens entered by Martin Lorenzen, in Binding, or those of S. D. Carpenter and W. M. Doty, in Printing,—the Superintendent of the Hall being also unable to find them.

All of which is respectfully submitted.

WM. H. WATSON, *Ch'n.*

CABINET WARE—LEATHER—BOOTS AND SHOES—INDIA RUBBER GOODS, ETC.

Judges,..
- ORIN GUERNSEY, - - - *Janesville.*
- DR. HUNT, - - - *Delavan.*
- WM. BIRGE, - - - - *Whitewater.*
- ROBT. FARGO, - - - *Lake Mills.*
- C. MINER, - - - - ———

Your Committee, having carefully examined the articles presented in No. 35, of Class D., respectfully report the following awards:

Best assortment of Cabinet Ware, D. Clark, Madison,..... Dip.
Best set Rose-wood Chairs,.... ...do.....do..... ..... $3
Best.....do..... Sofa,.....do.....do..... 3
Best Bedstead,..... .....do.....do..... 3
Best show of Cabinet Ware manufactured in the State, O. C. Buck & Co., Madison,..... ..... Dip.
Best Marble-top Centre Table, O. C. Buck & Co., Madison, dis.,..... 3
Best Mahogany Sofa,.....do.....do..... 3
Best Extension Table, with other purposes combined very ingeniously, M Quigly, Watertown. dis., ... Dip and 3
Best Mosaic Centre Table, Peter Glass, Scott, dis.,..... Dip. and 3
Best show of India Rubber Goods, Bliss, Eberhard & Festner, Madison, Dip. and..... 2
Best greatest variety of Wisconsin Tanned Leather, C. L. Robinson, Waukesha,..... Dip. and 2
Best Calf-skin, C. L. Robinson, Waukesha, ... 2
..d.....do... J. S. Whitney, Ft. Atkinson, dis.,..... 1
Best Upper Leather, W. S. Vescelus, Kenosha,..... Dip. and 2
..2d.....do..... J. S. Whitney, Ft. Atkinson, dis.,..... ... 1
Fine lot of Morocco, W. S. Vescelus, Kenosha,..... Dip. and 2

The Mosaic Centre Table, to which we have awarded a premium and Diploma, is one of the most splendid specimens of Mosaic work that we have ever seen—an evidence of ingenuity, mechanical skill, and patient application worthy of the highest credit; and the Committee do not feel warranted in passing it without a special notice.

The Committee were highly gratified with the specimens of Wisconsin tanned Leather, and trust that the Society will continue to encourage this important branch of business.

ORIN GUERNSEY, *Ch'n.*

CARRIAGES.—STOVES.—FURNITURE.

Judges,.. { E. ELDERKIN, - - - *Elkhorn.*
H. ROBBINS, - - - ———
G. P. DELAPLAINE, - - *Madison.*

Your Committee, appointed to examine articles for exhibition in No. 34, Class D., would respectfully report, that they have, to the best of their ability, performed the duties assigned them, making the following awards of premiums:

Best Double Carriage, Bird Brothers, Madison,..... Dip.
Best Single Top Buggy,....do.....do..... Dip.
Best Single Open Buggy,...do.....do..... Dip.
Best Pleasure Wagon, P. L. Smith & Co., Janesville,..... Dip.
Best Double Sleigh, Bird Brothers, Madison, ... Dip.
Best Single Sleigh, P. L. Smith & Co., Janesville,..... Dip.
Best heating and ventilating Stove and Furnace, H. S. G. Williams, Milwaukee, ... Dip.
Best Cooking Stove for Wood, C. D. Adams, Madison,..... $ 3
Best Parlor Stove, ...do.....do.....do..... 2
Best Hall Stove,.....do.....do.....do..... 2

The Committee further say, in conclusion, that in respect to the best single riding Buggy, it was difficult for them to decide between the two competitors, BIRD BROS. and J. B. WISER, Madison, but on the whole, awarded the Diploma to BIRD BROTHERS, and at the same time would earnestly recommend the Executive Committee of the Society to issue a Diploma also to Mr. WISER for entry No. 510.

All which is respectfully submitted.

ED. ELDERKIN, *Ch'n.*

SILVER WARE.—MATHEMATICAL INSTRUMENTS.

There were but few articles in this number on exhibition, and the Committee appointed to act failed to make any report. The following awards were made by the Committee of Revision:

Miniature Horizontal Clock, N. J. Moodie (at Cook & Belden's), Madison, ... Dip
Surveying Instruments (Troy manufacture), W. M. Hough, Madison, Dip

The miniature Clock, exhibited by Mr. MOODY, was a beautiful and very ingenious piece of workmanship—the works not occupying a space larger than an American twenty-five cent piece—and kept excellent time.

ORNAMENTAL NEEDLE, SHELL, AND WAX WORK.

Judges,.. { MRS. J. B. BRITTON, - - *Madison.*
MRS. H. W. HAYES, - - *Palmyra.*
MRS. P. E. CURTIS, - - *Detroit, Mich.*

Best Ottoman Cover, Miss M. F. Main, Oregon,.....	$2
..2d.....do..... Miss C. C. Cunningham, Oregon,.....	1
Fancy Table-cloth, M. Doerence, Watertown, dis., ...	1
Best embroidered Handkerchief, Mrs. D. S. Curtis, Madison, ...	2
..2d.....do..... Miss J. E. Millard, Kingston,.....	1
Best Muslin Embroidery, Mrs. D. S. Curtis, Madison, ...	2
Toilet Cushion, Mrs. Charles Abbott, Madison, dis.,.....	1
Best embroidered Slippers, Miss Leslie (juvenile), Mineral Point, ...	2
..2d.... .....do..... Miss F. A. Main, Madison,.....	1
Embroidered Handkerchief, L. H. Main, Oregon, ...	1
Worsted Embroidery on Canvass, Miss L. M. Gardner, Burlington, ...	2
Best Worsted Crotchet Tidy, Miss Aletha Church, Madison,.....	2
..2d .....do... .. Miss Elizabeth Corlie, Sun Prairie,.....	1
Best embroidered Cloak Shawl, Mary C. Bassett, Evansville,.....	3
..2d .....do.....do..... Miss Jane Freeman, Milwaukee,.....	2
Best Chair Cover, Mrs. Grundy, Madison,.....	2
Silk Embroidery, Mrs. J. Dupuy, Shelbyville, K. T.,.....	1
Best embroidered Scarf, Miss Sarah Munger, Madison, ...	3
..do.....do..... Skirt, Mrs. B. R. Hinkley, Summit, ...	2
..2d.....do..... Miss Eleanor Bonnewell, Milwaukee,....	1
Best ornamental Shell-work, Mrs. J. W. Liek, Madison,.	2
Best Worsted Embroidery (Washington), Mrs. A. E. Shepard, La Crosse,	2
Best Hair Wreath, Miss Caroline Whitmore, Whitewater,.....	2
..2d. Hair-work Flowers, Otto Michaelis, Baraboo, ...	1
Worsted Work, C. Delorme, Milwaukee, dis.,.....	1
Best specimen Darning, Miss Eva Johnson (juvenile), Blooming Grove,..	2
Specimen Hair-work (juvenile), Miss E. R. Melenda, Waukesha,.....	2
Specimen Leather Picture-frame, Mrs. C. S. Mears, Madison,... Dip. and	2
Specimens Leather-work, Mrs. M. Downer, Watertown,.....	1
Best Card-basket, Mrs. S. Klauber, Madison,.....	2
Best Fruit-wreath, Mrs. C. S. Mears...do.....	1

This Committee made no report other than the above awards; but we cannot forbear, even at the risk of being charged with invidiousness, a passing additional notice of Mrs. SHEPARD'S embroidered portrait of Washington. It required 253,000 stitches for its execution, and so perfect was the selection and arrangement of colors, that, at a little distance, it was repeatedly mistaken for a highly finished oil painting. In a word, it was one of the finest works of art of that class that we remem-

ber to have ever seen, and was certainly highly creditable to the genius, patience and patriotism of its fair and skillful author.

MILLINERY.

Judges,.. { Mrs. L. W. Hoyt, - - - *Madison.*
Mrs. C. E. Lewis, - - *Milwaukee.*
Mrs. S. G. Colley, - - ———
Miss Mary Riddle, - - *Beloit.*

Silk bonnets, head dresses and flowers, Mrs. M. S. Parker, Berlin, Dip. and $3

FINE ARTS.

Judges,.. { I. A. Lapham & Wife, - - *Milwaukee.*
C. C. Olin & Wife, - - *Waukesha.*
Mrs. E. C. Carr, - - - *Madison.*

Carving in Wood and Stone, C. Pedricks, Ripon,.....Dip.
Crayon Landscape, Mrs. Chas. Abbott, Madison,.....Dip.
Photograph in oil. J. S. Clow, Madison,.....Dip. and $5
Photograph in Water Colors. J. S. Clow, Madison,.....Dip.
Melainotype, A. S. Wood,..... .....do .....Dip.
Hallotype,.....do.....do.....Dip.
Oriental Painting, Mrs. E. Smith,... .....do..... 3
Grecian Painting, Mrs. Waldo Skinner,....do..... 3
Jack Knife Engraving, S. D. Carpenter,...do.....Dis. Dip. 3
Daguerreotypes, J. S. Fuller,..... ...do.....Dip. and 5
Photographs,.....do.....do.....Dip.
Ambrotypes,..... ..do.... .....do..... ....Dip. and 5
Largest and best exhibition of Oil Paintings, J. W. Hunt, Madison, Dip. and 5
Work in Plaster, J. W Hunt, Madison,.....Dip.
Ten specimens French Lithographs, August Pergoli, Milwaukee,.. 5
Best Painting in Water Colors, E. F. Brooks, Madison,..... .. 3
Carving on Stone, H. C. Hoffman, Milwaukee,..... .....Dip.
Life Size Alabaster Statute, "Sabina," Jos. Nicoletti, Milwaukee,....Dip.
Oil Portrait, Mrs. S. Crawford, Madison,.. ....Dip.
Best Oil Paintings of old masters, Rev. G. T. Riordon, Madison,..... 5
Best specimen Penmanship, Bryant & Stratton,.....Dip.
Fruit Painting, Jas. Johnson, Milwaukee,.....Dip.
Best Monochromatic, S. H. Donnel, Madison,..... 3
Pencil Drawings, Mrs. C. E. Lewis,....do..... ....Dip.

DISCRETIONARY DEPARTMENT.

(Miscellaneous Articles not included in the foregoing Departments.)

Judges,.. { D. S. CURTIS, - - - - *Madison*,
DR. C. R. HEAD, - - - *Albion*,
D. DAGGETT, - - - - *Milwaukee*.

Best Refrigerator, Thos. George & Co., Chicago,.....Dip.
Best Patent Knife Cleaner,.....do.....do.....Dip.
Best Old Dominion Coffee Pot,..do.....do..... 1
Best Slate Roofing, J. L. Patch, Madison,.....Dip.
2d best Slate Roofing, R. E. Davis, Milwaukee,..... 2
Best Pure Grape Wine, Chas. Hanford, Emerald Grove,..... 3
Best samples Pure Juice, Catawba and Isabella, Peter Kehl, Prairie du Sac,.....Dip.
Best Pure Strawberry Wine, Chas. Hanford, Emerald Grove,..... 2
Best samples Red, White and Black Currant Wines, A. S. Wood, Madison, 5
Best samples Rhubarb, Goosberry and Raspberry Wines, A. S. Wood,..Dip.
Best sample Currant Wine, H. W. Hayes, Palmyra,..... 1
Best sample Currant Wine, Mrs. H. J. Starin, Whitewater.....Dip.
Best sample Black Currant Wine, Mrs. E. M. Williamson, Madison,..... 1
Best Portable Picket Fence, Peter Taylor & Son, Decorah,..... 2
Best Improved Patent Fence, Crowns & Carhart, Fox Lake,.....Dip.
2d best Portable Fence, G. B. Peabody, Kilbourn City,..... 2
Best Portable Field Fence, Bruen's patent, D. F. Brown, Delaware county New York,.....Dip.
Best Extra Winter Wheat Flour, Jackman, Alden & Co., Janesville, } Dip.
..do..do.. Spring..do....do.....do.....do....do.....do.... } and 5
2d best Extra Spring Wheat Flour, Thomas Bussey, Edgerton,..... 3
Best Case Minerals, R. Trestrail, Secretary LaFayette county Agricultural Society, Schullsburg,.....Dip.
Best Case Minerals and other articles, N. W. Agricultural Society, G. B. Salmon, Secretary,.....Dip.
Best specimens Stencil Plates, Seales, Presses, &c., Childs & Co.,Chic., Dip.
Best sett Chess Men, Julius Vogel, Madison,..... 1
Best Coffins, Green & McKay, Madison,.....Dip.
Best case Shrouds..do.....do..... 2
Best Car Wheels and Railroad Castings, Blanchard & Arnold,.....Dip.
Best Marble Monuments and Tablets, A. Abbott, Madison,.....Dip.
Best case sample of Oils, A. E. Goodrich, Chicago,.....Gold Medal.
Best Kedzie's Water Filterers Jas. Terry & Co, Rochester,...Cer. Excel.
Best Gilt Mouldings and Gold Frames, A. B. Beeker. Milwaukee,.....Dip.
Best Willow and Ornamental Fruit Stand, and Ozier Willow, George P. Peffer, Pewaukee, (see statement in Committee's Report,)..... 2
Best Flour Sacks, 100 lbs. and 50 lbs., S. Farwell, Chicago,.....Dip.
Best sample Cigars and Tobacco, J. R. Hiestand, Blooming Grove, Trans.
2d best..do...do.....do.....G. P. Peffer, Pewaukee... .....Trans.
Best African Imphee.....do.....do.....do.....Cert.
Best case Dental Work, J. C. & T. B. Howells, Madison,.....Dip.
Best sample Honey, J. M. Case, Cold Spring,..... 3
2d best. .....do..R. Babbett, Oregon,..... 2
Samples Honey, Samuel Prince, Whitewater, ...Trans.
...do...Fluid, Gas Lamps, Oils, &c. T. P. Shaw, Milwaukee,..... 2
Ornamental Floral Design, W. P. Towers, Madison,.....Dip.
Best specimen Lithographic Printing, Lipman & Riddle, Milwaukee,.Dip.

DISCRETIONARY DEPARTMENT,—(continued.)

Model School Seat and Desk, R. S. Carter, Ripon,..... .....Trans.
Carved Double Headed Lion, R. L. Read, Mineral Point,..... .. 1
Carpet Sweeper, O. Holden. Chicago,..... Certificate of Excellence.
Patent Gas Generator, Mace's patent. Hopkins & Snow, Waupun,..Trans.
Models of Steamer and Yacht, L. H. Boale, Milwaukee,..... } Dip.
Mechanical Chart & Lumberman's Ass't, do....do..... }
Specimens Tin Ware, Adams and Davenport, Monroe,.....Trans.
Specimen Head Light and Machine Oils, A. E. Goodrich & Co. Chic., Dip.
Patent Saw Gummer, Stone and Ward, Athens, Ill.,.....Dip.
Best quality Lumber, C. H. Luce, Madison,.....Dip.
Best sample Map Drawing, O. Guernsey, Janesville,. .....Dip.
2d best... ....do.....W. M. Hough, Madison,..... 3
Brown's Patent Money Drawer, Noah Dalton, Janesville,.....Dip.
Improved Bran Duster, Z. P. Cogswell,. .....Trans.
Best Tire Upsetting Machine, Gates' patent, J. H. Humes, Racine,...Dip.
2d best....do.....do.....Wm. Morse, LaCrosse,..... 3
Lot Strengthening Plaster, Wm. Euen & Co., Waupun,.....Tran.
Specimens apple trees, J. C. Plumb, Lake Mills,..... 3
....do....Gas Fixtures, Edmund Gibbs, Madison,.....Dip.
....do....Compound Mastic Roofing, (C. R. Milks patent,)
N. Hoyt, Madison,.....Dip.
Specimen Building Stone, (Pr. du Chien) A. A. McDonnel, Madison...Dip.
Hop Machine, and Clothes Swinger, L. M. Vinton, Medina,.....Dip.
Gilmore's System of Bee Keeping, A. A. Copeland, Madison,.....Trans.
Sample Sugar Cane Seed, S. Horseley, Lake Mills,..... 2
Specimens Concentrated Lye, and Purified Salt, Penn. Manufacturing Co.,
Pittsburg, Pa., very superior articles, by the way, and highly creditable
to their enterprising manufacturers,.....Dip.
Samples of Evergreens. J. C. Plumb, Lake Mills,.....Trans.
Sample Seedling Chestnuts, Jacob Lowe, Loweville,..... 3
...do..Sugar Cane, S. Horseley, Lake Mills,..... 3
...do..Stained, Ground, and Cut Glass, Wm. Gething, Milwaukee,...Dip.
Patent Chemical Soap, J. C. Crondale, Prairie du Chien.

REPORT.

HONEY.—There were eight different samples of this pleasant article on exhibition—all good. It is desirable to have as much of this luxury produced, as well can be. It costs but little money or trouble—less, perhaps than any commodity which the farmer presents to the market. One thing, in this connection, seems to be rarely thought of; that is, that the bee gathers most of its treasure from a source that no other agency can procure for us, and from fountains whence man gathers no other income,—the cells of the flower, while they seem not at all robbed—their seed and fruit being none the less perfect; nor is their perfume decreased. The miner digs deep for the crude metalic treasure by hard toil; the plow and spade brings earth's bounty up, while mechanic skill is required to fit it for our use, and all requiring hand labor. Our skill is required to convert

the milk into butter and cheese; the same is true of the sap of the tree and the cane; but the faithful bee supplies us with his delicious product, in its perfection, ready for our use. Then let us cherish and appreciate the "busy bee," who always yields the largest share of his product to others. His example is worthy our regard, as well for liberality as industry.

The exhibitors of Honey were, Pliney Clark, Montrose, Dane Co.; J. A. Carpenter, Waukesha; H. R. Leach, Eagle, Waukesha Co.; R. Babbitt, Oregon, Dane Co.; J. M. Case, Cold Springs; Sam'l Prince, Whitewater; Isaac Atwood, Lake Mills; J. H. Barker, Waupun; this last from manufactured bee feed. The judges awarded the premiums respectively in their order, to Case, Prince and Babbitt.

Cigars and Tobacco.—Extremes often meet. Next on the list of entries to Honey, comes "the weed." There were three samples of Cigars, and two of Tobacco, grown in this State. They were both of thrifty growth, well cured and of good flavor; and both were accompanied with cigars handsomely made from the same, by the exhibitor.

J. R. Hiestand, of Bloomingrove, Dane Co., and G. P. Peffer of Pewaukee, the former taking the first premium on Cigars, and the second premium on Tobacco; while the latter took second premium on Cigars and first on Tobacco. Mr. Hiestand also exhibited four varieties of the finest water melons we have ever seen in Wisconsin. Straus Brothers exhibited the third lot of Cigars, not grown in the State, and which they had daily on sale at the Fair.

Refrigerator, Coffee Pot, &c.—Thomas George of Chicago, Ill. This Refrigerator was of a new style, and said to possess superior excellence, having means of ventilation. The "Old Dominion Coffee Pot," also possesses some new and good points which render it popular in the culinary department.—Diploma and premium were awarded to these articles.

Slate Roofing.—Two specimens were exhibited; one by

J. L. Patch, Madison, first premium, a diploma; the other by R. E. Davis, Milwaukee, second premium.

N. Hoyt, of Madison, exhibited samples of compound mastic roofing, C. R. Milks' patent, said to be a superior article, the best in use—diploma awarded.

Chess Men.—A handsome set, made by hand, by Julius Vogel, of Madison—premium.

Wines.—Among the attractive features of the Fair, were the numerous specimens of excellent Wines, made from various fruits, as grapes, currants, blackberries, gooseberries, raspberries and pie-plant. Most of them possessed real excellence for clearness, flavor, and body. We think it is gratifying to see the increased attention that is thus evinced to the cultivation of grapes and other delicious berries, in our State; and believe it is a presage, alike of enhanced comfort and health, among the inhabitants; and we will venture the assertion, as one well founded, that when the manufacture and use of *home wines* becomes general among us, drunkenness will disappear to an equal extent.

The number of exhibitors of these wines were twelve, and the number of kinds were ten.

H. W. Hayes, of Palmyra, took the first premium on currant wine, 1 year old. A. S. Wood, Madison, took the first premium on old currant wine, (black, white and red,) on raspberry and rhubarb, and the second premium on new red currant wine. It was a splendid collection. Mrs. E. M. Williamson, Madison, second premium on black currant wine. Mrs. H. J. Starin, Whitewater, Walworth Co., diploma on currant wines.—Colby & Willey, Janesville, premium on blackberry wine. A. D. Wright, Ripon, currant, grape and rhubarb wines, diploma. Chas. Hanford, Emerald Grove, first premium on old pure juice of grape; also premium on strawberry wine. C. C. Olin, Waukesha, Waukesha Co., W. H. Angel, Sun Prairie, Dane Co., J. L. Gilbert, Pleasant Prairie, Luther Landon, Waupun, all exhibited good specimens of currant and rhubarb wines. The

wines were generally so good that the committe could not easily determine superiority among many of them. Peter Kehl, of Prairie du Sac, exhibited samples of the pure juice of Catawba and Isabella grapes, expressed this season. They were very delicious, and elicited uniform praise from the many who tested. This young man has had good experience in growing grapes and in the manufacture of choice wines, on the Rhine, and thinks there is little or no trouble in raising grapes successfully on the banks of the Wisconsin. He has promised a plain and full description of the whole operation for the *Farmer*. A diploma was awarded to him. Mr. Wood, of Madison, also received the premium for the greatest variety of wines.

Seals, Presses, Plates, Medals, &c.—Childs & Co., of Chicago, exhibited a fine assortment, in a show case, of articles in the above line; every variety displaying good workmanship; received diploma.

Coffins, Shrouds, &c.—Green & McKay, Madison, had a beautiful display of these articles; diploma and premium.

Window Shades and Wall Paper.—There were two exhibitors of articles in this line, but the assortment was very small. Bliss, Eberhard and Festner, and Green & McKay, all of Madison. The articles were fair.

Castings.—The display in this line was small, though very good. Blanchard & Arnold, of Milwaukee, exhibited some heavy car wheels, and other railroad castings, of much excellence, for the patterns and quality of iron. The iron men spoke highly of them. Diploma.

Marble Work.—In this Department, Abijah Abbott, of Madison, exhibited some splendid monuments and tablets, very handsomely finished, and of beautiful specimens of stone: Diploma. There were some well finished mantles and statues, but we did not learn whose they were.

WATER FILTERERS.—Jas. Terry & Co., of Rochester, N. Y., had an assortment of these useful articles on exhibition, of the Kedzie Patent; Certificate.

GILDINGS.—J. A. B. Baker, Milwaukee, exhibited several fine specimens of gilt frames and mouldings; Diploma.

PORTABLE FENCES.—We are glad to see the inventive genius of our country, turning so much of its energies to this subject. Cheap, convenient and durable fences, are a matter of interesting moment, in this prairie region, where lumber is scarce. Geo. B. Peabody, of Kilbourn City, and Crowns & Carhart, of Fox Lake, exhibited samples of "Garlicks Patent"—took first Premium; D. F. Brown, Delaware Co., N. Y., "Bruens Patent"—took Diploma. These are portable board fences. Peter Taylor & Bro., Dekorah, Iowa Co., their portable picket fence—second Premium. There was another patent portable fence, whose exhibitor's name we did not learn.

OSIER WILLOW.—Of this article, Geo. P. Peffer, Pewaukee, exhibited some fine, unmanufactured samples; an ornamental fruit stand, made of the same. The cultivation of this, is, no doubt, deserving of more attention in this country.

The following is

G. P. PEFFER'S STATEMENT.

My Osier Willow patch, from which the specimens awarded a Premium were cut, comprises but eight square rods—four rods, a growth of three years, and four of two years. The cuttings were stuck at distances of two feet, in rows four feet apart. Last spring I sold the whole stock, with the exception of 100 canes, eight feet high—which were reserved for bows and left standing—to Mr. C. Frederick, manufacturer of willow ware, for so much per pound dried, he doing the cutting, peeling and drying himself; so that the value of the patch may be stated thus:

8 Bundles of cuttings, 13 lbs. each, 5 cts. per lb.,	$7 20
500 Cuttings, extra strong,	1 25
100 Large canes, reserved for bows,	1 00
Total yield of 1-20 of an acre,	$7 45

At this rate, an entire acre would be worth $149 00.

Mr. Frederick formerly imported his willows, but this year has got his supply from within the State, preferring the home-grown, to the imported canes, on account of greater firmness and toughness. Most of the willows raised are of the German variety, like those exhibited by me ; but those grown by Dr. Weeks, of Milwaukee, are of excellent quality, though English. GEO. P. PEFFER.

Pewaukee, September, 1858.

OILS.—For burning and lubricating. There was a beautiful display of oils—pure strained and clarified, of many varieties, on exhibition ; and if all the stores which furnish the consumer would take pains to furnish them with this excellent quality, it would raise the standard of the trade, and be more satisfactory to the purchaser, and in the end, increase the trade.

A. E. Goodrich & Co., of Chicago, had the largest variety, and most beautiful display of oils that we ever saw, clear as crystal ; consisting of what they call improved signal light, machine and engine lubricating, head light, and others among their manufactured oils; besides lard, pure sperm, kerosene, whale, elephant, cod and linseed oils ; a Gold Medal and Diploma were awarded to these oils.

T. P. Shaw, of Milwaukee, also made a fine show in this line, both in quality and variety; to which was awarded the second Premium.

FLOUR SACKS.—A bundle of these—50 and 100 lbs.—were exhibited by S. Farwell, of Chicago, which were well approved by those who are judges, and use them.

DENTAL WORK.—In this line, there were two exhibitions, both being much admired. Doctors J. C. & T. B. Howells, of Madison, had the largest variety and collection of work, which received the First Premium and a Diploma. Doct. Edward Griswold, of Beaver Dam, exhibited a single set, which was very beautiful, and received the Second Premium. Doctors Howells, also exhibited several curious and finely finished *aquariums*, which attracted much attention ; they are very fashionable in eastern parlors.

Floral Sign.—A very beautiful and unique floral sign was exhibited by W. P. Towers, of Madison; the large colored letters, on glass foundation, were composed entirely of petals and leaves of flowers, and was universally admired. It read—"Madison Horticultural Society;" a Premium and Diploma were awarded for it.

Lithographic Press.—A press and stones for doing work in this line of art, was on exhibition, and worked by Lipman & Riddle, Milwaukee, throwing off handsome pictures of the Fair Grounds and display. They also exhibited a frame of handsome pictures, cards, blanks, &c.; they received a Diploma.

Flour.—There were several barrels of most excellent flour on exhibition, from different mills. In a State noted for its excellent wheat, we are always gratified to see a large show of flour at our Fairs. It would be much better for the prosperity of the State, if its entire product of surplus wheat were ground up in the State, and exported in the form of flour, rather than to send off the unground wheat; because there is a profit in making flour; there is an advantageous occupation for considerable labor in making barrels, and an advantage in having all the bran and shorts used in the vicinity where the wheat is grown; besides, a thousand dollars worth of wheat can be transferred to Buffalo or the South, for less expense, in the shape of flour, than in wheat; hence, all these profits and advantages counsel the capitalists of our State to engage in the manufacture of flour more extensively. Jackman & Alden, Janesville, Rock Co., received Diploma and Premiums for best winter wheat and spring wheat flour; Wm. Birge, Whitewater, Walworth Co., Second Premium, for winter wheat flour; and Thos. Bussey, of Edgerton, Dane Co., Second Premium for spring wheat flour. The judges found it difficult in deciding between these samples, where all was first rate.

Gas Works.—Hopkins & Snow, of Waupun, exhibited Mace's patent gas generator, for light; it is said to furnish a

cheap and pleasant light, and to be economical for the household—Premium. Edward Gibbs, of Madison, made a handsome show of gas fixtures, of various patterns and designs, of both cheap and costly fabrics—Diploma.

Minerals.—There were several collections of the various minerals found in our State; some of them displayed in fine artistic cases with systematic arrangement. D. J. Seeley, Elk Grove, specimens of lead and quicksilver—Premium. Richard Trestrail, Shullsburg, from Lafayette County Agricultural Society, a handsome case of various minerals, lead, iron, zinc, copper, &c.—Diploma. G. B. Salmon, St. Croix, from N. W. Agr. Soc., specimens of various minerals—Diploma. H. M. Page, of Platteville, Grant Co., exhibited a small lot of minerals. L A. Taylor, of River Falls, Pierce Co., exhibited a handsome collection of agates from the Northwest.

Models.—L. H. Boale, Milwaukee, exhibited some handsome models of hulls for steamboat, sloop, yacht, &c., which evinced good skill in such matters. Mr. B., had also on exhibition a curious table of calculations, called the "Mechanic's Chart and Lumberman's Assistant," said to be convenient for a great variety of estimates—Diploma.

Stoves and Tin Ware.—The show in this line was meagre; Adams, of Madison; and Adams & Davenport, Monroe, Green Co., exhibited good articles—and were awarded premiums on them.

Lumber.—There was but one exhibition in this line. C. H. Luce of Madison, presented some of the handsomest pine plank we ever saw—1 1-2 to 2 and three inches thick, very long, clear, and a yard or more in width.

County Maps.—O. Gurnsey, of Janesville, exhibited a very finely executed map of Rock county, bordered with small plats of the several cities and villages within the county. W. M. Hough, of Madison, also had a similar map of Dane county, and minutely executed. These maps define the topography of

the various counties, with the farms, improvements, &c., which render them very convenient for reference. To Mr. G., was awarded the first premium, and to Mr. H., the second.

Tire Upsetters.—There were two of these ingenious and convenient machines for upsetting wagon tire, and of about equal excellence, so that the committee were for a time at a loss, to decide between them. They enable the blacksmith to reduce the tires very quickly, to any desired extent, without cutting or rewelding. J. H. Humes, Racine, exhibited Gate's patent—First Premium. Wm. Morse, La Crosse, exhibited Hargrew & Gibbs' patent—Second Premium.

Seedling Apple Trees.—J. C. Plumb, Lake Mills, Jefferson county, exhibited five specimens of very fine growth, and looking healthy and good—Premium. Mr. P., also exhibited some very fine Virginia cedars and pines, in pots—Premium. Mr. Plumb is one of the oldest and most successful nurserymen in our State.

Norwegian Printing.—E. Strangeland, of Madison, had on exhibition several handsome copies of a large volume of "Luther's Commentary on the Gospels and the Epistles," printed at Madison, in the Norwegian language. It is well printed on good type and paper, and elegantly bound; got up at great expense, and is probably the largest book ever printed and bound in Wisconsin, in any language, richly deserving the encouragement of those who can read the language—Diploma.

Sugar Cane Seed.—S. Horseley, Lake Mills, Jefferson county, exhibited a parcel of sound, well-ripened *Sorghum* seed, from cane planted the 25th of May, 1858—Premium. This shows a favorable fact, and is encouraging to the cultivator. C. A. Johnson, Blooming Grove, Dane county, also exhibited a quantity of well-ripened seed of this year's growth, and is prepared to furnish it to farmers on liberal terms. G. P. Peffer, of Pewaukee, exhibited some specimens of the *Imphee*, or

African cane—Certificate. There is but little doubt that these articles will be useful and highly advantageous to the farmers of this State to cultivate largely as a common crop. From the Sorghum and Imphee they can very soon manufacture as much sugar and molasses as are needed in the State.

Native Chestnuts.—Jacob Lowe, of Loweville, Columbia county, exhibited some chestnut burs, with partially grown chestnuts, from seedlings in his garden, eight years old, and sixteen and a-half feet high, said to be the first grown in this State. Chestnut trees are rapid growers, and may become advantageous to cultivate in this State, for fencing timber—Premium.

Glass Work.—William Gething, Milwaukee, exhibited a handsome lot of ground, cut, and colored glass, and side-lights, with rough and fluted heavy glass. The whole displayed beautiful designs and good workmanship—Diploma.

Cakes, &c.—Mrs. L. Bird, of Madison, exhibited a lot of choice cakes, crackers, &c., pronounced excellent; but they were presented too late to be entered for competition.

Gentlemen's Linen.—Mrs. H. D. Filkins, Madison, exhibited a case containing a beautiful assortment of gentlemen's linen, mostly machine work—Diploma and Premium. Miss Mary H. Atwood exhibited an elegant gentleman's shirt, made by hand—Premium.

Patterns.—Mrs. Ferguson, of Madison, had on exhibition a lot of skillful and convenient plans and patterns, with appropriate directions for dress cutting, which escaped the notice of the appropriate committee, but were much noticed and praised by spectators.

Track Sulkey.—One of the lightest, strongest and best finished track sulkies which we ever saw any where, was exhibited from the factory of Bird Brothers, in Madison, and elicited universal admiration among their other fine works.

VARIABLE EXHAUSTER.—A curious and ingenious apparatus for regulating the steam exhaustion in locomotives and engines, the invention of Jones Patrick, Chicago, was exhibited by Mr. Goodrich of the same city. It is said to be highly beneficial in saving the expense of fuel on railroads, &c.

MISCELLANEOUS.—There were many other articles which came under the notice of the committee, which belong under no general head, but which possessed merit, and were awarded appropriate premiums, diplomas or certificates. An improved Bee Hive, by J. A. Carpenter, Waukesha; Pebble-stone Candlesticks, with lettering and stamping for Embroidery, Mrs. Ira J. Clark, Kenosha; a beautiful miniature Horizontal Clock, N. J. Moody, Madison; Chemical Blueing, and Scissors Sharpener, R. Jones, Baraboo, Sauk county; Model of School Desk and Seat, R. S. Carter, Ripon; carved Double-head Lion, R. L. Read, Mineral Point; Carpet Sweeper, O. Holden, Chicago; an Elk Horn embedded in solid oak, A. W. Kellogg, Barraboo; Patent Saw Gummer, Stone & Ward, Athens, Illinois; Brown's Patent Money Drawer; Noah Dalton, Janesville; Improved Bran Duster, Z. P. Cogswell; box Fancy Rabbits, Melville Eggleston, Madison; lot Strengthening Plaster, William Euen & Co., Waupun; fine specimens of Wisconsin Stone, or Marble, from Prairie du Chien, beautifully dressed, by A. A. McDonnel, of Madison; Hop Machine, and Clap for swinging clothes, S. M. Vinton, Medina, Dane county; Gilmore's System Bee Keeping, A. A. Copeland, Madison; specimens of Purified Salt, and Concentrated Ley, from the Pennsylvania Salt Manufacturing Company, Pittsburg; Patent Chemical Soap, J. C. Crandall, Prairie du Chien; and a quantity of beautiful Jellies, the name of exhibitor not found.

D. S. CURTISS, *Chairman.*

FARM WORK AND EQUESTRIAN EXERCISE.

PLOWING MATCH.

Judges,..	WM. F. PORTER,	*Madison.*
	JOHN A. FLETCHER,	*Johnstown.*
	E. M. DANFORTH,	*Oconomowoc.*
	O. G. EWING,	*La Grange.*
	M. C. BARTHOLOMEW,	*Lodi.*

The rules laid down by the Society to regulate the plowing, were these :

1. The quantity of ground for each team to be one-fourth of an acre.
2. The time allowed to do the work will be two hours.
3. The width of the furrow to be eleven inches, and the depth not less than six inches.
4. The furrow slice in all cases to be lapped.
5. The teams to start at one time, and each plowman to do his work without a driver or other assistant.
6. The premiums offered by the Society, will be awarded to the individuals who, in the judgment of the Committee, shall do their work in the best manner : *Provided*, The work is done in the time allowed for its performance.
7. No person, except the Viewing Committee, will be allowed to enter upon the grounds after the work is commenced, until the Committee leave the ground.
8. Each plowman to strike his own land, and plow entirely independent of the adjoining land.
9. Within the fourth of an acre plowed, each plowman will be required to strike two back furrows, and finish with the dead furrow in the middle.

REPORT OF COMMITTEE.

The Committee on Plowing report as follows :

That a less number of competitors appeared than was expected, as in their opinion plowing is first in order of the operations on the farm, and when viewed in all its bearings, will be first in importance.

But ten teams were entered for the contest, only eight of which appeared on the ground and competed for the premiums, to-wit :

Six teams, two horses, and one man each.
One team, two horses, and one boy 14 years old.
One team, one pair of oxen, and one man.

Lots were drawn for the lands, each of which contained one fourth of an acre, and were plowed in from thirty-three to fifty-one minutes.

The work was all so well done, that it made it somewhat difficult for the committee to decide where the most skill was exercised. But after a close examination they awarded the premiums as follows, viz:

To James Osmond, of Rock county, work done with Winchester & De Wolf's Plow in forty-one minutes, first premium,... ..... $6 00
To W. W. Waldron, Madison, work done with Grand de Tour Plow in thirty-six minutes, second premium,..... ..... 4 00
Wm. H. Porter, Burke, with Billings & Carman's Plow in forty-one minutes, third premium,..... 2 00
C. M. Palmer, of Oregon, 14 years old, work done with Grand de Tour Plow in forty-one minutes, first premium for boys,..... ..... 5 00
O. M. Palmer, of Oregon, Grand de Tour Plow, with one pair of oxen, work done in fifty-one minutes, first premium for oxen,..... 5 00

The work was so well done by all the other competitors, that the committee would have given them premiums had there been more at their disposal, and would suggest, that in their opinion, the amount of premiums offered by the Society for this most important branch of farming is quite too small, and should be increased both in amount and number of premiums, in order to induce a greater number of farmers to attend the Plowing Match, and make it, as it should be, the most attractive part of our State and County Fairs.

Mr. C. B. Hoyt, of Port Washington, exhibited and used his Rotary Plow on the grounds; your committee were much pleased with the work performed with it, and recommend it favorably to the farming community.

W. F. PORTER, *Ch'n.*

LADIES' EQUESTRIAN DISPLAY.

Judges,..	Col. N. W. Dean,	*Madison.*
	Gen. Rufus King,	*Milwaukee.*
	Gen. Stevens,	*Dodgeville.*
	Col. Z. P. Burdick,	*Janesville.*
	Harrison Reed,	*Menasha.*

The Committee on the Ladies' Equestrian Display make the following

REPORT:

Your Committee, in discharge of the difficult and exceedingly delicate duties assigned to them, in making their awards, have labored under a considerable degree of embarrassment, arising from obvious and mainly unavoidable causes. The short space of time allowed for the trial display; the difficulty of obtaining, from the Judges' stand, an unobstructed view of the performance of each contestant, and the many interruptions consequent upon the attendance of a vast multitude of interested observers, may have led them to overlook some who, in strict justice, were entitled to receive a premium at their hands. They are, however, without dissent, of opinion that the prizes awarded were all well deserved, and only regret that there was not a much greater number at their disposal; being satisfied that as many more could have been meritoriously bestowed. The ladies, almost without exception, exhibited a good degree of skill in their free and easy style of riding, and in the general management of their horses.

Your Committee, in making up their judgment, have been governed by the following considerations:

First—The gracefulness displayed by the rider, and the firmness and ease with which she sat upon the saddle.

Second—The confidence, method and easy facility denoted in the management of her horse.

Finally—The general style of riding, deportment, tastefulness of habiliments, and freeness from unnatural effort to excel.

The whole number of *fair* contestants, who entered the field for the prizes, was nineteen. The unfavorable condition of the

weather undoubtedly prevented the attendance of a much larger number.

The "Ladies' Equestrian Display" is acknowledged to be one of the most attractive features of the State Annual Fair, and in consideration of the objects sought to be gained by your Society, in its beneficial results to the human family, by promoting a spirit of rivalry among the fair sex, in a display of superior horsemanship, inducing free and frequent exercise in the pure, open air, invigorating to health, imparting strength to muscle, grace to form, and development to the physical system, rendering it unnecessary to invoke the *tricks* of art to blind the deficiencies of nature. Your Committee would respectfully suggest, that they believe that the interests of the Society and "the rest of mankind," would be largely promoted by manifesting a greater display of liberality in offering its prizes to be competed for.

Your Committee would also take the occasion to recommend that hereafter, on similar occasions, the Committee of Judges be mounted on horseback, and ride in company with the ladies as far as they may choose, where they would have a far better opportunity of witnessing the merits of the fair riders.

Your Committee make the following awards :

1st Premium, Miss Louisa Button, Milwaukee, gold watch, worth,..... $25
2d....do.... Miss Ann Cronk, Janesville, set of silver ware worth..... 20
3d....do ... Miss Martha T. Smith, Columbus, side-saddle, bridle, &c., worth, ... 15
4th Premium, Miss Mary Hall, Janesville, silver flower vase, worth 10
5th....do... Mrs. Almira Maynard, Whitewater, gold pencil worth,..... 5

All of which is respectfully submitted.

N. W. DEAN, *Ch'n.*

EXECUTIVE MEETINGS.

STATE AGRICULTURAL ROOMS,
MADISON, Oct. 14, 1859.

The members of the Executive Committee present and in session during the State Fair of 1858, were as follows:

J. F. Willard, A. D. Kirkpatrick, T. D. McCarty, H. M. Billings, A. E. Ray, David Williams, S. S. Daggett, Wm. R. Taylor, G. H. Williston, David Atwood and D. J. Powers.

Evening sessions were held during the entire week; but the subjects considered had direct reference to the conduct of the Fair, and consequently no permanent record was kept.

After the close of the Fair the Auditing Committee, Messrs. Willard, Powers and Atwood, settled and paid such accounts as had been presented previous to and during the Fair; the amounts and items of which may be found entered up to the credit account of the Treasurer, in the cash book of the Society. The Treasurer will also be found debited with the State appropriation for 1858, and all the moneys derived from the Fair; the bills and corresponding vouchers for all of which, will be found duly filed in this office.

The Executive Committee, in session on the 10th of October, voted to award to A. E. Goodrich, of Chicago, a Gold Medal, worth fifty dollars, for his superior show of Oils at the Fair. Also, a similar one to Mr. Jones Patrick, of Chicago, for his Steam Exhaust Regulator.

Also a Medal of equal value to W. H. Rarey, Esq., of Ohio for his extraordinary skill in the management of the horse.

The testimonial to Mr. Rarey was accompanied by the following resolutions, which have been duly transmitted to him as required:

Resolved, That Prof. W. H. Rarey, of Ohio, in his exhibitions of horse taming, as given at the State Fair, in Wisconsin was eminently successful; and that the Executive Committee of the Wisconsin State Agricultural Society, would commend the system, as taught by Prof. Rarey, to the favorable consideration of all persons interested in that noble animal, the Horse.

Resolved, That in consideration of our high appreciation of the great value to the world, of Prof. W. H. Rarey's system of educating the horse, and of our high esteem for him as a man, the Wisconsin State Agricultural Society present to him a gold medal of the value of fifty dollars, with appropriate devices.

Resolved, That the President and Secretary be, and they are hereby directed to procure said medal, and transmit the same with a copy of these resolutions to Prof. Rarey, with all convenient despatch.

The report of the Auditing Committee having been received and adopted, the Committee adjourned, *sine die*.

D. J. POWERS, *Secretary*.

STATE AGRICULTURAL ROOMS,
MADISON, Dec. 8, 1858.

The Committee met pursuant to the requirements of the By-Laws, on the 8th of December.

Present: Messrs. Billings, Willard, Atwood, Daggett and Powers.

President in the Chair.

The Auditing Committee made their Annual Report, accompanied with files of bills allowed, and for which they had drawn orders on the Treasurer, to the amount of $7,103,03.

Report accepted, bills examined and found correct. Report adopted.

The Treasurer's Report was presented, showing the

Amount of balance and receipts for current year to be.....		$11,795 90
Vouchers examined and orders cancelled on account of premiums paid,.....	$2,822 50	
On account of expenses, &c.,.....	7,633 96	
Balance of cash on hand,.....	1,339 44	
		$11,795 90

Committee then adjourned to 9 A. M., Dec. the 9th inst.

STATE AGRICULTURAL ROOMS,

DEC. 9th, 9 o'clock, A. M.

The Committee met pursuant to adjournment.

Present same members as day previous.

President in the Chair.

Col. Billings offered the following preamble and resolution, to wit:

Whereas, The Military Companies encamped on the Fair Grounds at the recent Agricultural Fair, rendered essential service to the Society, as escort and police, thereby making the Exhibition more orderly and attractive in all its arrangements; and

Whereas, This service was attended with many pecuniary expenses to said companies, therefore,

Resolved, That the sum of two hundred dollars be appropriated from the funds of the Society, and placed at the disposal of the several companies of Madison, as a partial consideration for the benefit derived by the Society from such services.

The motion was unanimously adopted.

Voted that the President take charge of the Society's tents and have them safely stored on the most advantageous terms.

On motion the Committee adjourned till February 7th, A. D., 1859.

D. J. POWERS, *Sec'y.*

ANNUAL MEETING OF THE SOCIETY.

STATE AGRICULTURAL ROOMS,
MADISON, Dec. 8, 1858.

In pursuance of the requirements of the Constitution, the Society met at the State Agricultural Rooms, on December the 8th, at 3 o'clock, P. M.

J. F. Willard, President, in the Chair.

The Treasurer presented his Annual Report of the financial condition of the Society; which on motion of Col. Bird, was adopted and placed on file.

After some preliminary discussion, and the offering of sundry motions which were not carried, it was moved by E. W. Edgerton, that a committee of five be appointed by the Chair, to revise the Constitution of the Society, and report such amendments thereto as they may deem necessary, at 7 o'clock, this evening. Carried.

The Chair appointed E. W. Edgerton, E. A. Calkins, N. W. Dean, J. W. Hoyt, and C. C. Olin, as said committee.

Whereupon, the Society adjourned to meet at the Court House, at 7 o'clock, P. M.

COURT HOUSE, Dec. 8, 7 o'clock, P. M.

The Society met pursuant to adjournment. President Willard in the Chair.

The committee appointed to revise the Constitution, presented a report, which, after a warm discussion, and one or two amendments was adopted.

[NOTE.—The amendments having been incorporated, and the Constitution, so amended, published in this volume, it is not deemed advisable to include them in the minutes of the Annual Meeting.—ED.]

On motion, the meeting then proceeded to an election of officers of the Society, for the ensuing year as provided by the amended Constitution.

Voted to ballot for a President of the Society for the year 1859. The Chair appointed J. G. Knapp, D. J. Powers and D. S. Curtiss, tellers and inspectors of the election.

The ballot resulted as follows :

J. F. Willard, received ..... 29 votes,
B. R. Hinckley, received..... 28 votes,
And 4 were scattering.

Whereupon, J. F. Willard was declared elected President for the ensuing year.

The Society then proceeded to the election of a Vice President, to supply the place of A. D. Kirkpatrick, whose term expires on the 31st inst.

J. V. Robbins, of Dane, having received a large majority of the votes cast, was declared elected Vice President for the ensuing year.

On motion, the meeting proceeded to ballot for three members of the Executive Committee ; which resulted in the election of G. B. Salmon, of Hudson, St. Croix county, B. R. Hinkley, of Summit, Waukesha county, and J. E. Dodge, of Potosi, Grant county ; and their election was so declared.

On motion, it was

Resolved, That the Secretary prepare a full and complete statement of the fiscal affairs of the Society for the year 1858, to be by him submitted at the next Annual Meeting of the Society.

On motion, the meeting adjourned, *sine die*.

D. J. POWERS, *Secretary*.

ABSTRACT OF COUNTY REPORTS.

THE FARMER AND HIS HOME.

From an Address before the Columbia County Agricultural Society. September 24th, 1858.

BY HON. JOHN P. McGREGOR.

Not only do our farms produce cattle and horses, but they are also the nurseries of that nobler animal, man. It is true that many men are born and raised in cities, but let them be fenced in there, and the infusion of new and vigorous life from the country be cut off, and the race would soon degenerate, if not become extinct. It is the country that furnishes the blooded stock of men, who have the speed and bottom, physically and intellectually, to run the race in cities and win the prize. It is country blood that gives the courage and endurance of body and mind necessary to successful conflict with difficulties and competition in great enterprises. It was country blood that gave to such men as Webster and Wright their strength, dignity and power. It was country blood that sustained Cyrus W. Field under all trials and diasters, when even the well-known courage and obstinacy of John Bull gave out, and which brought to a successful conclusion the laying of the Atlantic Telegraph cable.

We are placed in a region the most favorable in the world to final and complete success in civilized and enlightend husbandry. I do not believe that there can be found on the face of the earth so glorious a country, considering soil, climate, productions, geographical and commercial situation, as the

region some four or five hundred miles in diameter, having its centre somewhat south of Galena on the Mississippi River, and embracing considerable portions of the States of Wisconsin, Illinois, Missouri, Iowa and Minnesota. Here can be raised all the crops and fruits of the temperate zone in their perfection, and here the race of domestic animals and men flourish in full vigor. For though men can exist in climes where excessive heat and terrible cold prevail, it is only in temperate regions that they reach their finest and fullest devel opment. The mixture here, too, of the people of different States and foreign blood, is most favorable to the improvement of the race of men. And if we do not here, of all this continent, produce the finest crops and the best stock, and the noblest men—men sound in body and sound in mind—men developed physically, morally and intellectually—we shall fail of our manifest destiny, and be a reproach to that great and good land in which Providence has planted us.

Just about this time, all over the land, farmers and farming are being glorified by distinguised speakers at County and State Fairs, and lest you should become conceited by much adulation, I shall adopt a somewhat different course. The object of these Fairs is improvement. If you have reached a state of perfection, there is no need of improvement. I propose to point out to you some of your short comings, and to show you how you fall short of the standard you ought to attain, as also how some steps may be made in advance.

We hear a great deal said of the dignity of labor. Let us examine this matter a little, and see in what the dignity of labor consists. See the ox drawing the plow, the horse turning the threshing machine—mere muscular exertion, without thought, without mind—on and on, round and round. Suppose men and women hitched to these machines instead—and there are countries where such spectacles have been seen, even a woman hitched beside a cow in the furrow. Is such labor dignified? There may be dignity in it for the horse or the ox, for they are acting according to their gifts and power. But there

is no dignity for man in such mere mechanical and muscular efforts. There is one glory of bodies celestial and another of terrestial bodies. The glory of the brute is one, and the glory of man is another. Man consists of body and mind, and the creator intended that both should labor—that both should labor together—and the labor of man is dignified as it is intelligent and adapted to bring about the ends designed by God. That labor is dignified that makes two blades of grass grow where one grew before.

The labor that creates is dignified ; the labor that destroys is of another kind.

See the ship builder, George Steers. He reasoned and planned and perfected his plans—then came the execution—and chip by chip was shapen, and plank by plank was built up that pride of our navy the NIAGARA—fit to contend with sea and storm—fit to bear the banner of our country in triumph over ocean, in war ; and greater still in peace, in that she was found fit to bear to its destined place the electric way over which the lightning is to carry messages of peace between the old world and the new. What is more worthy than such labor ?

In some parts of our country, degraded, though hard labor, has already impoverished the soil, so that, year by year, the country becomes less able to afford the means of civilized life ; the population becomes, year by year, more poverty stricken and ignorant. Such labor, certainly, is not worthy of high praise.

Now this is emphatically an age of improvement and advancement in the arts of war and in the arts of peace. The Mechanic and the Manufacturer are making wonderful strides ; the Chemist, the Electrician, and the Engineer astonish us continually—all is progress. It will not do for the Farmer to lag behind or remain stationary. He too must bring all the energies of his mind to bear on the inprovement of the science and practice of farming.

Yes, labor is dignified as it becomes intelligent. The labor the world expects of you is not that kind which will leave our

fertile lands an exhausted waste after a generation or two, but of the other kind that takes up the work of the Creator where he left it and carries it forward to a more glorious perfection.

Many of us now present, will remember the rich and magnificent, though wild beauty of the prairie and openings of this country when first the Agriculturist came in to disturb the solitude and plant civilization in the wilderness; and may not think it an easy task to add to the original beauty of the scene. But the task is yours; yours is the labor which is to make over the whole surface of our land—to plant fields and gardens, fruit trees and flowers, shrubs and vines, yours to build and adorn dwellings and schools and churches, villages and cities. Yours so to cultivate the soil that year by year its productions increase; so that year after year the soil shall sustain a larger number and an improved race of animals and of men; so that your sons and your sons' sons shall live in abundance, cultivating an improved soil, with improved knowledge amid all the blessings of civilization and education, and not be compelled to fly from an impoverished homestead to seek new homes and begin a new civilization in some wild, untrodden wilderness. Such labor will be glorified of man and blessed of God,—to such labor you are called.

To bring about such a result as I speak of, no amount of physical strength, no amount of mere muscular exertion is sufficient. The mind has to do its share of the work. It requires labor, hard labor, to plow and sow, to reap and thresh, to plant and to cultivate. And to do this successfully, it requires to be done with care and knowledge. All the operations of the farm, to make them successful in any high degree, and to any permanent end, require to be done with enlightened knowledge. Farming is becoming a science as well as an art, and to its successful prosecution in the years to come, must be brought the enlightened labor of an educated people. It will not do to follow blindly the methods of our fathers, we must find new ways, new machinery, new crops.

I come now to speak particularly of one thing which it seems

to me more than anything else in this country keeps back the theory and practice of farming. Most farmers are ambitious to educate their children, and to do this they send them to school. If the farmer is well to do in the world, he sends his sons and daughters away from home to some boarding school—and they come back with new notions, new desires, new ambitions. The brighter and more ambitious of the sons desire to be merchants, physicians or lawyers—and as soon as possible desert their farm life and take to other occupations. The daughters wish to live in town; they wish to marry merchants, or doctors, or lawyers—they wish father to sell the farm and move into some village where they can enjoy themselves better—where they have more company, &c. Undoubtedly there are exceptions to this rule, but that such is the general result of the kind of education I have spoken of, I think none will deny.

Now this takes place and takes place continually, in spite of the continual glorification of farmers and farmer life by orators and writers, by the politicians and the press. It takes place in spite of the well known fact that of all the money made in the country, by far the largest share is made by the cultivators of the earth—in spite of the well known fact that where one merchant and business man succeeds, very many entirely and ruinously fail—where one doctor or lawyer gets a practice worth any exertion, a hundred gain a bare subsistance and live a life far less comfortable and independent than any farmer who is not ruinously in debt.

It is well known that many an unsuccessful merchant and lawyer sighs to get back to farming again, and sighs in vain, because he has not the means to purchase a farm, and his habits of life have unfitted him and his family for the severe trials and privation necessary to make a farm by hard labor alone. It is well known that many a successful business man does turn back with eagerness to farm life as soon as he is able to do so, and many more wish to do it, but are kept in town by families that are not willing and are unfitted by their habits to live

in the country—though that life is what they need to restore their moral and bodily health—both ruined by the dissipation of cities; and yet goes on continually this desertion from the roofs of the farmers of your best educated and brightest sons, the most polished and refined of your daughters. For all this there must be a cause. Bear with me while I try to explain what the cause is, and how it may be removed. I believe the trouble to be not that you educate your children too much at school, but too little at home. Not that you make too much of them, but you make too little of yourselves.

Man is a social animal—he enjoys the society of his fellows—and not only does he enjoy it, but it is necessary to any considerable development of the higher qualities of his nature. If, when your children go from home, they get glimpses of higher social enjoyments, then, as a matter of course, they sigh for the new life—they wish to leave the old home.

Now there is no reason in this country why the farmer should be a boor. There is small reason in that talk about the honest and hard fisted yeomanry, even. The farmers here can be, and ought to be, and must be, gentlemen—educated and intelligent gentlemen—there is no reason why they should be anything else; there is no reason why they should not be gentlemen in every sense of the word, unless some shall take it to imply idle men. But to become this in the highest sense, implies exertion and improvement, socially and intellectually. Many of us have, perhaps, received a very poor and defective education, we have had no opportunities for enjoying good society. What of it? Shall we stop short and make no improvement ourselves, and give our children an education that shall hopelessly separate them from us? Not at all, we must go on and improve; we must *make* good society for ourselves. Man, as I said before, is a social being, he does not improve by solitude, but association and attrition with his fellows. I care not how hard and rough the rock is—let the pieces be rubbed together, and the corners are soon worn off, the rough edges soon become smooth and polished. Charity, it is said, begins at home—there, must education and improvement begin.

It is not enough, that your house is a shelter from the sun and storm; it is not enough that it is a place in which to eat and sleep with safety; it should be a place of the highest social enjoyment, and the first thing to be done after you have a house, is to make that house a pleasant home; pleasant and improving for you; pleasant and improving for your children. To do this requires no great expense, no costly furniture, no expensive and showy dress, no magnificent rooms. The thing is simple. On the outside you want trees and shrubs and vines, fruit trees and flowers—on the inside you want neatness and kindness, books and music, a disposition to learn and enjoy. I know that many farmers start poor, and that they have a sharp struggle, perhaps, for many years, for a bare subsistence, but it is no harder, and costs no more effort, to strive for something more. Very many lead a more bare and rough life than there is any necessity for. Having the means in their hands to live well, they live very poorly. They have no orchard, no garden and raise perhaps but two or three crops, wheat, corn, potatoes; their labor must be more diversified to be profitable in the long run, and the garden is most shamefully neglected. How small and desolate a patch of ground is what many Farmers call their garden. How different from what it might and should be. To be sure it takes some time and labor to cultivate a garden, but nothing pays better; at a very small expense you may have varied, abundant and pleasant food for a large portion of the year. How few understand this and practice it thoroughly. Farmers have the means and should live so far as food is concerned the best of all classes of men. Next after the garden comes the orchard, and that gets far too little attention; you are pressed for time, you are poor and unable to buy trees and many of the trees your neighbors have planted have proved failures, they cannot stand the climate, they are not adapted to the soil, and you have not the courage and faith to try. Well, there is one way that I have never known to fail, and that you are all able to pursue. You can get seeds and plant them, if you like, where you wish the trees to grow, plant three or

four seeds in a place, and protect them by a stake or two, and when the young trees come up, save the best and let the rest get out of the way. It takes some time to grow trees in this way but they will grow, and I know several orchards in this State and northern Illinois that are now bearing finely, produce good fruit, and are perfectly thrifty and hardy. Better raise it in this way than not at all. About the house you can leave some shade trees, if you are so fortunate as to have any, if not, you must plant some at once. You can certainly find a day or half day to set out shade trees. If not, you can plant the seed, and on all our rich soil trees grow with wonderful rapidity and luxuriance, so that, if you will only start them, you will have a forest of shade in a few years. Now for flowers and flowering shrubs and vines; after all these your wives and daughters will look with only a word of encouragement from you. In many cases they do it without the word of encouragement, and perhaps in spite of many grunts of disapprobation. But it must be done; bare life is not enough; it is human to seek refinement and beauty. Now for the house itself—don't be ambitious for a big or fine house. If your means are small, let your house be small also, and unpretending as all country houses ought to be; but let it be neat. If you cannot afford paint, or your house is too rough for paint, you can give it a coat of whitewash, you can plant about it vines, the hop, the Virginia creeper or the grape, and in a few years your rough and humble cottage has become a beautiful bower. In the house you want no rooms too good to use, no parlor kept carefully locked up and entered only on rare occasions. Use the best room yourselves, make it cheerful and occupy it cheerfully; read there, sew there, play there, receive your friends and enjoy life there. When the father or brother comes in wet and weary, let him leave his muddy boots and his wet coat in the outside kitchen, and let him come into the sitting room to his evening's reading, or music, or conversation, leaving the roughness of the farm life behind him. There is absolutely no reason why the Farmer's family should not enjoy life at home,

and refined and intellectual life as much as any city family; all they have to do is to put out their hands and grasp it. I have put down the chief refiners at home to be books, music, and social intercourse, &c. I believe they are. Books and good books must be provided first of all, not only for amusement, but for learning. There is absolutely no reason why the Farmer should not be a learned man. Do you say you cannot afford the money to buy books, nor the time to read them? I say you cannot afford to go without them or leave them unread. You can no longer keep up with the times without study. Brains will beat muscle at farming just as surely as they do in science, in politics and in war. It is intellect that wins, muscle is a mere slave now-a-days. Intelligent labor will carry away all the prizes from ignorant toil, and by reading and meditation you may become intelligent. * * * *

I have set down music as one of the refining influences of home, and I believe it to be a very important one. * * * Life is hard enough, don't let us try to make it harder; let us soften it down and smooth over the rough places the best we can, give music a chance and it will do its part. If you wish your children to love home, if you wish to love home yourselves, you must make that home lovely and pleasant. Furnish your family social amusement at home and they will be little inclined to seek dissipation abroad.

We are social beings and social improvement and polish can only be obtained by friendly intercourse. Take the wisest and most learned, and most polished of mankind and isolate them, let each inhabit a lonely house and see seldom or never a neighbor, and how long before they will become a race of boors.

I know that in a new country, the farmers' dwellings must be somewhat distant from each other, but we are getting past that period; we have now neighborhoods, and year by year the homes of our people will thicken and cluster together on our prairies and openings. My advice to you is to visit more; young and old, go and see your neighbors; invite them to see you, not to make a parade and fuss over each other; not to

worry yourselves into a fever, oh you good housewives, that your guest may be stuffed to repletion with the products of your cookery, but get together to exchange kindly greetings, to talk over the news, and if you like, to discuss the latest fashions; let your good men talk of their crops, or their stock, or their politics, if they will. Let the young folks visit; encourage them to visit and enjoy themselves, but do not give up the visiting to them, that is a great mistake. They need your company, and you need theirs. * * * * * *

I have said little about schools or religion, in the training of your children and yourselves. But schools are a well understood part of our system, compared with the matters I have been speaking of, and religion is now universally admitted to be the only sure foundation on which to build up any true refinement and civilization.

Train up your children in the ways I have spoken of, and they will be good society; they will soon find that they have no occasion to feel awkward or ashamed in any society in the country. Do you say that the matters I have spoken of are small and trifling? You must remember that life is made up of small things; the sparkling diamond receives its polish from particles of dust. You must remember that it is the neglect of such trifles that drives away from the farmer's home and the farmer's life, generation after generation of the farmer's children, and that makes many farmers condemn their life as bare and cold, and without enjoyment. These trifles are worth attending to.

Let us now try to picture the farmer's home as I have hinted at it. As for the house, let it be of two stories, or one story, let it even be a log house, but let it not be bare—desolate and staring; let it stand on a gentle knoll; let there be on this side fertile, and well cultivated fields; here the orchards; here the garden, well filled with fruits and vegetables; here the barn and yard, where the fat and sleek cattle come and go, or stand lazily chewing the cud. Let us enter the front door-yard, abundant in grass, and in fragrant and flowering shrubs, and

walk to the entrance porch overshadowed with trees; with roses and grapes and other vines struggling to climb up over the doors and windows, around the corners and even away up over the roof. We open the door and enter; we find on all sides evidences of neatness and refinement. We enter the living room, adorned with books, music and engravings, where the family assemble, after the day's work, to read, to sing, to play together. From here the sounds of music and laughter go up, let us hope, also, the accents of prayer. Here father and mother, brother and sister, friend and neighbor meet in friendly and social intercourse. Here is the scene of the highest social enjoyment. Young people raised in such a home will love it and cling to it, they will leave it with regret and return to it with pleasure. Here will cluster their holiest affections, and should your son be urged forth into the world, by ambition or enterprise, or genius, should he become a miner in Australia, or a whale fisher in the Arctic Seas; should he become a merchant prince in a great city, or a statesman of national renown, his greatest gratification in success will be the pleasure he knows his success will give to the family at home. To that home he will often return; to that home will he send his children on a pious pilgrimage. That home while he lives, he loves, and he blesses it with his dying breath. Such homes are in the power of you all; and in such homes should the coming generation be reared.

PREREQUISITES TO SUCCESS.

From an Address before the La Fayette Agricultural Society,

BY HENRY S. MAGOON, A. M.

It is a truth, and thank God for this truth, that everything beautiful or valuable in this world, can be acquired only by labor. This is true alike of individuals, and of the acquisition of those possessions and glories that illumine the history of nations. Why, this great Republic, beneath whose venerable shadow our people, from ocean to ocean, are resting both secure and happy, was established only by years of toil, by powers of skill, by energies of action, that shook the Continent to its center! Yes, our Revolutionary Fathers nobly devoting themselves to their country's service, not only were forced to march through storm and winter's cold, often with the blood oozing from their frozen feet, but thousands on mighty battle fields laid down their life, when not a friend was nigh to speak a kindly word or to wipe the bloody tear as the soul was rushing to eternity!

And so with things of daily use; labor is the only coin with which they can be purchased. From the pearls that dazzle in the ball-room, to the rough hoe with which you break clods; from the ox-wagon lumbering its load into market, to yon locomotive rushing thunder-footed through the plain, *industry stamps everything as her's*. How necessary then, that the Farmer should be diligent. It is vital. Therefore, Farmers! would you have farms smiling in the finest order; would you have a home not less beautiful than happy, together with a prosperous manhood, and an old age crowned full of blessings; seek not to gain them save by earnest work, by that patient

diligence which success follows as a necessity. Much that is beautiful, apposite and true, do these lines contain :

"Labor is worship!"—the robin is singing;
"Labor is worship!"—the wild bee is singing:
Listen! that eloquent whisper upspringing
Speaks to thy soul from out Nature's great heart.
Labor is glory!—the flying cloud lightens;
Only the waving wing changes and brightens;
Idle hearts only the dark future frightens;
Play the sweet keys, wouldst thou keep them in tune.

Labor is health! Lo! the husbandman is reaping,
How through his veins goes the life-current leaping!
How his strong arm, in stalwart pride sweeping,
True as a sunbeam, the swift sickle guides.
Work—for some good, be it ever so slowly;
Cherish some flower, be it never so lowly;
Labor!—all labor is noble and holy,
Let thy great deeds be thy prayer to thy God!

We remark, *secondly*, that the Farmer should be an educated man.

Agriculture is an art full of science. Not a plant grows but grows in conformity to established laws, and the soil in which its roots are nestled, is so composed that only elaborate chemistry can analyze and explain its elements. There is, in fact, more science connected with the vegetating process of a single plant, than can be explained in half a volume. Every potato and garden vegetable, every stalk of grain you cultivate, draws from the ground certain chemical constituents, and these constituents being essential to the very existence of the plant, must of course first exist in the soil itself. If Nature has not placed it there, Art must.

You know that if you sow wheat on the same ground, year after year, both the stalk and the berry of the wheat will become not only poorer, but the whole crop produced will be constantly diminished. And precisely so with all other grains; with barley and oats, with rye and corn. Now, science unravels the mystery of all this, and shows exactly what elements have been withdrawn from the soil, the absence of which causes this gradual failure. It goes further :—It shows how soils that are naturally unproductive, may be fitted for any kind of grain; how soils that are worn out, may be redeemed, and rendered

more fertile than ever before ; and how, by skillful rotation of crops, together with certain fertilizers, the ground may be preserved for ages in all its primeval richness. These are simple matters, it is true, to the scientific farmer, yet surely they are of such importance to success as can be hardly calculated.—The man who knows them, will find that, by getting thus at the bottom of the subject, not only the thousand principles of agriculture, that were before as blind as night, and which wrapped the whole art in obscurity, are made perfectly plain, but that his intellect is daily as much exercised and improved as his body. He will find that agriculture is no menial craft, no Augean stable or stone of Sisyphus ; but an art that rises and brightens in philosophy to the height of the noblest interest and dignity ; one that is filled with truths as beautiful, with wonders as sublime, as probably ever delighted or astonished the human mind.

We therefore say, that the Farmer should be an educated man. We do not mean that it is requisite, that he should know how to translate the pages of Terence or of Thucydides, or be able to solve the knotty problems in Calculus and Physical Astronomy ; for, although these have their use in disciplining the mind and strengthening its powers, yet they are hardly indispensable for the field. But, we aver, that every farmer should know something of Chemistry and Natural history ; of Botany and Natural Philosophy. He ought, indeed, to be an adept in the Natural Sciences generally. Let him especially learn Agricultural Chemistry, by heart ; let him devote his long winter evenings to the study of this and other branches of his pursuit, and be assured, he will find his toil bountifully repaid. He never reaped a richer harvest.

We speak with confidence, not only this, but we further affirm, that the time is fast coming when farmers in this country, will be *compelled* to study these things. Our present system of farming and modes of tillage, are too rank and hard even for this splendid soil. These lands, however fertile, must finally give way, and grow poor and barren under such

race-horse cultivation, such ceaseless and indiscriminate extortion as we practice upon them, and which distinguishes the agriculture of this country from that of any other country in the world. Not fifty years, indeed, will elapse, if our present system be pursued, ere fields that are now seemingly inexhaustable, and which, every season, groan with the weight of matchless harvests, will be so sterile then as hardly to produce a weed. Those worn-out and deserted plantations which one may see in almost every county of Virginia and North Carolina, will eventually find their parallel even in the rich valleys of the West. That day, it is true you may not see it, nor I; but, if our farmers continue to war on Nature and against every law of science, as many of them have done and still do, that day, like a ghostly famine, will surely come aud cause your children to regret a bitter doom. Now, no man has a right by ignorant and ruinous tillage, thus to destroy the fertility of the soil, to abuse the ground—God's heritage to man—and thereby doom his posterity to poverty and slavish drudgery. It is barbarous, it is knavish—sinful. How much better, nobly to wed science to his labors; to learn the secret of farming without rendering his fields a desert; to transmit his farm every way as productive as when the plow first broke its surface; to inform himself by diligent study, of those eternal laws of nature, which, governing alike the vast orb and the minutest atom, go down and regulate the production of every plant, tissuing its fibres and breathing the vital sap through its pores, and the mandates of which even to the smallest particular, it is ruinous to disobey. Yes, let the farmer patronize Science; let him learn both Philosophy and Theory, as well as the Practice of his profession; and thereby alone can Agriculture, the first of arts, be elevated and sustained to that noble dignity which God and Nature intended.

There is but one more requisite to which I may, in conclusion, refer, and to which I invite your special attention: that is—The Farmer should love his calling and continue at it through life. If there is a man who should be proud of his profession,

that man is the Farmer. As his is the most ancient, so it is the most useful of all arts. It is the ultimate and almost the universal sustainer of human life, and as such, it has in all ages, employed a vast majority of mankind. A recent computation makes the number of persons belonging to the Agricultural class, more than five hundred millions! But not alone have the masses, the humble citizens of every age and civilized country, chosen your profession for their occupation, but many of the highest fame have turned to it for solace and happiness, when the world's dazzling honors could delight no more. Witness a TIMOLEON, after that patriot had triumphed for the establishment of laws and freedom, in battles yet splendid in history; a CATO, the Censer, when he had grown as old in honors as in years; a MIRABEAU, when the fortunes of LOUIS XVI. and of an ancient throne and aristocracy were borne, Atlas-like on his shoulders; and him, "brightest of the bright, and purest of the pure,"—WASHINGTON himself! These are but a few of that long line of princes, orators, poets and statesmen, who, by engaging themselves at least casually in Agricultural pursuits, have, in every age, adorned your profession, and who—to use the beautiful simile of CHAPIN,—"wear upon their breasts the stars of the Legion of Honor!"

But who doubts that Agriculture is honorable? Who can pronounce it unworthy of pride and admiration? Why, its commonest fruits are health, strength of body, vigor and purity of mind, and surely these are enough to entitle it to our love, not to mention those, its renowned votaries from whom fame has been harvested, nor its constant and immeasurable benefits to man. True, there may exist a few lunatics, some dandies or aristocrats, perhaps, some wrinkled old maid, all woe-begone, or villainous old bachelor without a hat, who affect to despise your calling as humble or low! But, be it boldly said, every sensible person, every decent and respectable person, will regard your profession with sentiments of both esteem and honor. Without question it is so regarded by the world.

Now, if this be true with mankind generally, with how much prouder honor should it be esteemed by the Farmer himself.

He should love his art as Pygmalion did his statue, as Bacon did philosophy—not fitfully, or for a season only, but earnestly and for life. And this, indeed, is most important to success. That man never lived, who disliked his calling, and at the same time prospered in it, whether he began with capital or not. No, "a feeble heart makes a feeble hand," in every pursuit and calling in life. The student, to become eminent as a scholar, must idolize science, must make the midnight stars the sentinel witnesses of his devotion; the professional man must apply himself with a mind-shaking earnestness, if he seeks to become, not indeed a Chalmers, a Galen, or a Marshall, but to obtain a respectable competence. Just so with the farmer; he must like his calling, must take an interest and pride in it, if he would not grow poorer every day, and drag along his slow length from poverty to penury, from penury finally to beggary.

Yet it is not enough that the farmer should merely love his calling; besides this he must expect to continue in it through life. You remember the proverb of the "rolling stone;" there is truth in it. It is not the meteor, flashing from one quarter of the heavens to another that gives us *light*, that calls forth the delicate-footed Spring, or rolls the harvests of bounteous Autumn; no, it is only that fixed planet, whose place to-day is that of to-morrow, of next year, forever. There is a moral in this; a moral from which men, even in their worldly tasks may learn a practical lesson. To succeed, the toiler must not veer from one pursuit to another—yesterday a farmer, to-day a lawyer, to-morrow a physician; far otherwise. After choosing his occupation, carefully, and in accordance with the bent of his inclination, he must resolve to stand by it unto the end. Only such perseverance is successful, and, depend upon it, the farmer who furrows out for himself a different course in life, will see the "bitter day."

I was reading, yesterday, for the second time, an incident of a little girl, who, in early Spring, went out on the river-side to gather flowers. Not coming back, search was made, when she was found lying near the water on the green bank, drowned.

In her little hand were clasped the flowers she had culled; and on her cheek, though chilled in death, still lingered her wonted smile of innocent beauty and hope. So did she die, and so with those same flowers on her bosom, was she placed in her little grave. She died a *martyr* to the Beautiful, and I have thought that her devoted aims and spirit were worthy of imitation, and should form a pathetic model. Yes, let that devotion to a pursuit, which distinguished this little child, be a lesson to men in every profession in life, and to you, honest farmers. Stand by your calling! Honor it, love it! Give it not up only with life itself! So, shall you, like her, as sweetly rest. So, shall death come as placidly; tears as holy water your tombs; the laurels of a life-long Art bless your sleep, and your children's children point with pride to the graves of their Fathers, where hallowed marbles shall bear on each the beautiful sentiment of Tully:

"Semper mea consilia pacis et togæ socia, non belli atque armorum fuerunt."

If, therefore, the Farmer is first a Diligent Man; if secondly, he is an Educated Man; if lastly, he Honors his Profession, and ready to stand up for its dignity and general success, he continues a life-long worker in his pursuit; there is nothing to bar him from becoming both respected and happy, both rich and influential—in a word, an Enlightened and Prosperous Wisconsin Farmer.

PERMANENT IMPROVEMENT IN AGRICULTURE.

From an Address before the Waukesha Agricultural Society, at Waukesha, Sept. 17th, 1858.

BY HON. THOMAS P. TURNER.

American Agriculture commenced at the point which that of England had reached at the time her colonies were planted on the shores of the western continent. It has not kept pace, we are sorry to say, with that of the mother country. A virgin soil, abounding in all the elements of the highest fertility, and requiring at first but slight tillage to produce large crops, the abundance and cheapness of new lands, and the lack of persistent sturdy effort, which soon became an American characteristic, led at once to a superficial and exhausting mode of cultivation which has resulted in reducing thousands of acres of once fertile soil to a barren wilderness, as some portions of the older states lamentably present. That we farmers of Waukesha County should not pursue the same unwise course, but rather profit by their sad experience, we have formed an agricultural association, providing ample and suitable grounds for the exhibition of our various products, both animal and vegetable; and design to awaken an anxious desire throughout our community for the further improvement in agriculture and its kindred arts and sciences. We are hopeful of success, by adding largely to our membership, believing it not only the duty but the interest of every citizen as well as farmer, to unite with us.

We already see a reaction in the older states. American husbandry is now rapidly improving, and we shall not long be left behind by the leading agricultural nations of Europe. The old or exhaustive system is giving place to the new or fertilizing system, upon which productiveness of lands is constantly increased instead of being diminished.

With these few introductory remarks, we will endeavor to point out to you some of the ways and means. And first, it must be by adopting a higher standard of education, both general and professional. In this age of human improvement, mechanic's institutions are formed for the purpose of attaining a better knowledge of nature's laws. These give rise to literary and scientific societies, and these spur on others to form colleges. Some of these colleges have classes for metaphysics, for obtaining a knowledge of phantoms, but none of them teach, practically, the principles and theory of Agriculture, although it relates to the very vital principles of life—animal and vegetable. Learning can be of no use farther than as it contributes to the comforts and happiness of the community. Classical literature may be an accomplishment and ornament to a state, but Agriculture and Commerce are the bulwarks of a country. Societies should be seed-beds of physical knowledge; while colleges are often bars to such knowledge. Men are made to crawl on crutches to the shrine of custom, to acquire antiquated dogmas, and become pompous lispers of trifles. What is the first essential to the happiness of mankind?—Food. To obtain which, all knowledge should be made subservient, the best method of obtaining it from the earth enquired into. Such an inquiry systematically instituted would be an honor to the age we live in. Farmers are left to grope their way, mechanically, as the best they can. We are but clod-hoppers, say some—mere menials of society.

True, societies are formed; rewards are given for superior animals, the best specimens of agricultural products and improved implements; also, for plowing straight and deep,—all laudable in the design, but how few are there the wiser as to what is the food of the plants, or how the land can best be improved for permanent vegetation.

Men of all classes in farming pursuits should know why they do this or that act; and they will not only do it the more readily, but feel an interest in what has been done, and be induced to adopt and give hints for improvement; no man likes

to work in the dark; or, like a mill-horse, go because he is driven.

What we first need is an Agricultural College, located as centrally as possible, with every facility for practicing Agriculture in all its branches. The young farmers might there acquire a thorough knowledge, combining theory with practice and observation. With necessary endowments and foundations for professorships, with proper men to indicate the undertakings, with nothing to distract their minds from the vast fields of investigation about to be explored, the grand work of discovery and demonstrative experiment would be commenced under the most favorable circumstances. All theories would be brought to the same unfailing tests that men of other sciences usually employ. Nothing would be taken for granted, and nothing would be promulgated as an absolute truth that was not fully and demonstratively proved. Combinations of soils would, in time, be determined with unfailing accuracy. The law of fertilizers would be gradually unfolded, the science of Agriculture would begin to assume a tangible and certain form; it would begin to possess attractions which all the speculations in our present state of knowledge could never give.

Shall the beautiful and fertile State of Wisconsin be much longer without its Agricultural College?—particularly when some of the older States have not only endowed theirs, but Minnesota, so recently admitted into the Union, has also taken similar steps.

In reference to these interests of our State, legislation has been purblind. Mere literature has had its schools richly endowed and generously endowed by the State; farmers contributing their share, until, having become an abstraction, it looks down, in its lawn and from its velvet chair, at the soiled brogans of Agriculture, and, with a stare, asks, "Who art thou?—step aside!" And Agriculture stands aside; she humbles herself, forgetful of the unquestionable nobleness of her nature—forgetting whose fingers curiously adjusted every part of her beautiful and wonderful organism.

How can a State expect to flourish when the foundation of her prosperity is neglected? Clods and plow shares! ye lie at the foundation of health and good society. "The first creditor in every State is the plow." Let us tell our statesmen to look well to the farming interest, and choose only such to represent us who will dare to demand our rights. Farmers! let us no longer be the mere mass of society—regulated and handled as an immense political machine in the hands of the few; but exercising the spirit of inquiry which will teach us our rights as members of the body politic, let us then rise in our strength and demand of our legislators that protection in our art, which has been so long denied. The character of a Cincinnatus may be found among modern as among ancient farmers.

Agriculture should no longer be kept out of her place. Nay, she should *take* her place. That place is the first among the professions, first in importance, and first in honor.

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To a more thorough cultivation and manuring of the soil, we would next call your attention.

Thoroughness is a special requisite to the successful prosecution of any business of life. If it is worth doing at all, it is worth doing well. The ancient adage, "Dig deep to find gold," is very applicable to the farmers' vocation. This principle, applied to the tillage of a field, will give the crops thereon a greater space in which their roots may forage for sustenance and support—will operate favorably upon an excess of moisture, by putting in action a system of filtration, and will protect to a degree, governed only by the depth of the soil, from the disastrous effect of drouth. Deep tillage may, to some, seem a hackneyed subject, but when men will obey the injunction, "Go, and sin no more!" it will be time enough to cease alluding to it. The testimony in favor of deep ploughing is so abundant, and so frequently brought before the farmers, that it seems strange so few farms are brought to the light of the sun yearly, through the agency of the sub-soil plough.

Sub-soil plowing is not applicable, however, on land where the sub-soil is loose and leachy, consisting of an excess of sand or gravel without clay; it is not only unnecessary, but positively injurious to them.

Reciprocate favors with your soil; i. e. feed it if you would be fed by it. Manure and well directed labor are the secret of successful farming; without the former, sooner or later, toil becomes useless—without the latter, feeding is in vain. The means for replenishing the drain upon the soil should, as much as possible, be found within the limits of the farm. Every thing which can be rendered available as a fertilizer should be carefully husbanded, and protected from damage. We would strongly impress upon your minds the necessity of spreading over the barn yard a thickness of earth, such as swamp muck, clay, sand, or loam, according to the nature of the soil the manure is intended for, previous to the herds or flocks occupying it for winter quarters. After soaking up the liquid (the very essence of the manure,) the whole may be made into a "mixing," and this compost should be ploughed into the land as soon as convenient. To keep manure during the summer, it must either be covered up with earth, or remain in sheds where it has become compact by treading, which will prevent fermentation.—Yards should be made where the land is dishing; do not place them where the best part of the manure runs off into streams or road sides. Bear this fact in mind, that the excrement from three cows for one year, is worth more than a ton of guano which would cost from fifty to sixty dollars.

We would say to all, raise more live stock, and then you will have more means of keeping your arable lands fertile. The experience of centuries has proven that no system of farming can be permanently successful unless the animal product of the farm, is, at least, equal the vegetable product, and the greatest success has followed and does now follow that system which makes the value of the animal product exceed the other. A high state of agricultural prosperity can be obtained by no other means. Manure is money, and short paper is like a short

plant; a note at bank matures by falling due; an oat in the field matures by falling *dew*; but they will be found in most cases shorter than wanted, unless the fiscal bank and the bank of earth both receive timely deposits.

The farmers in the early part of the nineteenth century, in many places, still used a plow scarcely better in its model, than that used by the ancient Romans, and cattle were not unfrequently employed in treading out the grain.

Small inducement was held out to the skilled mechanic to engage as a laborer in agriculture, or anything connected with it. Stalwart limbs, and insensible to fatigue, were the chief requisites of a farm laborer, and even these were paid for in the usual niggardly way that brute force is only rewarded. Twelve dollars a month was given for the services of a farm hand, while a good mechanic at any other employment would obtain double that sum. A man that has mechanical skill sufficient to whittle out an ax-helve, make a wooden linch-pin and turn a grind-stone, would do very well for a farm hand, provided he was physically endowed with the power to work. Perhaps there was no business that required so little exercise of the intellectual faculties, as farming under the old method. Plow and sow in the spring, harvest in the summer and autumn, about covered the ground of necessary knowledge.

All these things have undergone a change. The inventive genius of mankind has, until the present century, been chiefly directed to manufactures and commerce, leaving the kindred and more vital employment of agriculture entirely out of view. The two women grinding at the mill, have both, been long since taken away, and water and steam, with their resistless power, made to perform work they might safely defy the united muscles of thousands of men to perform. The gossamer tissue of the silk-worm is handled by an iron-fingered engine, with all the delicacy of the most sensitive nerves; and the manipulations of all the arts have, by the triumphs of human genius, been turned over to the perfect workings of automaton machines. All this has been going on for centuries, while in ag-

riculture the chief processes were still confined to human hands. It is true a gradual improvement took place in the models of agricultural implements, and the material of which they were constructed; but these changes were forced upon community by the advancement of the mechanic arts generally, rather than produced by a bold and initiatory step in the agricultural department itself.

The best hand now employed upon a farm is not the man who can cut the neatest swath, or thrash out the most grain with a flail. Farm machinery is working a wonderful revolution in agricultural processes, and is doing much of the work better and much more rapidly than it was executed by the old, hand process. We well remember a farmer in the old country who prided himself upon the splendid manner in which he broad-cast seed wheat, and he would point to the grain field in the fall, when the grain was up, proudly contrasting it with his neighbor's unevenly sown ground. But at length that neighbor purchased a grain drill, and the comparison thenceforth was decidedly in his favor. The old farmer could never speak complacently of a grain drill, declaring it would ruin all skill in sowing, and enable a mere clod-hopper to scatter seed equal to the best wheat sower in the world.

Who could think, at the present day, of falling back upon the flail to do the threshing of our grain? The gang-plow, the wheel-cultivator, the horse-rake, the corn-sheller, &c., &c., and above all the mower and reaper are additional illustrations of the revolution that is going on in the agricultural departments of human industry, brought about by the direct application of scientific knowledge and inventive genius. Machinists are now co-operating with us to elevate agriculture to its proper place and importance; we have but to make known our wants to them, and soon the required implement is invented.

Machinery should, more or less, be employed as fast as our surplus means will admit. The lively rattle of the reaper and mower was heard this season in innumerable fields that never before, in gathering the harvest, felt anything but the slow

paced movement of the cradler. A few men in the harvest field very soon absorb, at two dollars per day, the cost of a reaper; two or more should unite in the purchase of these labor saving machines, if they own small farms.

There are undoubtedly very many machines of different kinds offered to the farmer which cannot prove otherwise than a failure, but they do no more disprove the value of farm machinery than a counterfeit gold piece would disprove the value of the genuine coin.

Many, doubtless, would say, how are we to buy those labor-saving machines? We answer, if you have more land than you can profitably till, sell part of it. The secret of successful farming has been said to be "much labor on little land," and the more we learn practically and theoretically of Agriculture, the firmer becomes our conviction that it is so. Could we be less covetous of surface, of large farms, and more anxious for productiveness, striving for better crops rather than for "one acre more," it would add incalculably to our prosperity.

"A little farm well tilled,
A little barn well filled,
A little wife well willed."

A few farmers are successful because their soil, naturally, is rich in all the elements of fertility, and suited in character and situation to the growth of large crops; but these farms form but a small proportion of the surface of our county. To be the owner of a larger farm than we can begin to improve and cultivate, is the passion of the American farmer. Nature is bountiful, but bountiful in weeds, as well as in corn and potatoes. When the land cannot produce fair crops of each at the same time, it is the province of the farmer to help his planting ahead, and he should put in no more seed than he can afford to give the proper preparation of soil and culture.

While one farmer raises from fifty to eighty bushels of corn to the acre, another raises only from ten to thirty; and so with other crops, and yet the soil may have been originally the same. But the one has put his labor in proper shape; he has sought

to keep up and add to the fertility of his soil; he has done every thing in the right time and in the right manner, and every year he has his pay for it.

The other has farmed more acres perhaps, but on the make-do principle, he has hurried over the preparation and culture of the soil, and with all his ambition has been more ready to make a show of acres than of full cribs and granaries. He, too, has had his reward, and if not "sold out" is anxious to, and go further west, where "little labor on much land" is the watchword.

Proper rotation of crops is another essential requisite to good husbandry; growing only those kinds of grain, grasses, roots and fruits which are the most suitable, nutritious and the most productive.

As manuring may be compared to the steam engine that propels the vessel, rotation of crops is the rudder which guides it in its progress.

Suppose a good coating of manure is applied, or the land is new, and a crop of corn or wheat is taken off. These crops will carry away a large part of the phosphates. In most cases therefore, a second crop of the same kind would not be so good as the first, and the third would be still less. There yet remains however, considerable quantities of other substance, which the grain crops did not so particularly require, such as potash and soda. With this a good crop of potatoes, turnips or beets may be obtained, and after this there is still enough lime to produce an excellent crop of hay. If the ground be seeded down with another crop of grain of a lighter character than wheat, as barley or spring rye, and that seeded with clover and orchard grass, sowing on for manure one bushel of plaster per acre, to be mown one year, fed the next, and the following a heavy growth turned under,—thus would the land again be fitted for a wheat crop, which should not be raised but once in every seven years from the same field.

Another very essential requisite is, to change your seed grain —procuring it from a more northern latitude, and from a differ-

ent soil from that it is to be sown upon. The sad experience of many farmers the past season, fully proves this importance: all who happened to sow the recently imported varieties, reaped the largest crops. No seed grain should be used more than two seasons upon the same quality of soil; the same practice should be observed with corn and roots. Always select the kind that matures the earliest, and put them in as soon as the land is dry enough in their several periods of sowing. To do so, the stubble should be plowed under soon after the harvest, thus turning under all the weeds before the seed is ripe, and thereby converting them into manures instead of allowing them (as is too frequently the case,) to impoverish the land. The scattered grain will mostly vegetate and afford good pasturage after the wild grass is cut off by frost; then it is plowed best—if it is not unusually dry—and much forwards the work for the following spring, which, of late, have been very backward and of short duration.

Always select the heaviest seed, and free from all seeds of weeds; for the heavier the grain the better will be the product, the more will it stock out as it imbibes more moisture, and conveys it to the cotyledons and plumula, enabling it to come earlier to maturity.

That like produces like, is an unalterable law of nature, and in its application to plants, and animals, and man was the same yesterday, is the same to-day, will be the same forever. It admits of no exceptions; all apparent exceptions can be explained on scientific principles. Yet, farmers continue to discuss the simple question of the propriety of planting large, small, or medium size seed, in order to produce the desired result. But the application of the principle to animals is at once comprehended and adopted.

Farmers do not expect to produce Shanghaes from Bantam chickens, Black Hawks from Shetland ponies, Short-horns from Devonshires, or South-downs from goats. The same law governs in all cases, and the size, color and quality of progeny may be predominated by the parents.

Hence, we would say—first, decide what kind, quality, or breed you will have ; then select, with this law in view, the finest specimen to raise from ; and be sure, in all cases of vegetables, the different varieties be grown apart, to prevent amalgamation.

The culture of roots, such as carrots, parsnips, ruta-bagas, turnips, &c., should be extensively entered into. Heavy carrot crops for cattle soon return carats of gold ; then we may turn our attention to the improved breeds of domestic stock, rearing only those animals which are the best of their respective kinds. What kind of animal is really the best for all, we cannot venture to say, because it mainly depends upon the ability of the farmer and the improved nature of his land ; we hesitate not to say, however, that, amongst most kinds—even our common native stock—many valuable animals may be selected, from which a profitable stock may be reared. We desire to impress this fact on your minds that, with good attendance and good feeding, inferior animals can be much improved ; but, on the contrary, the best of animals will deteriorate under a careless management, with insufficient or unwholesome food.

In this latitude nearly one-half the year must be passed without pasture for stock. It, therefore, is a matter of the greatest importance to farmers to know how to get them through winter in the cheapest and best manner.

Johnson, in his Agricultural Chemistry, informs us :

"Heat is a necessary condition of life and health, in all animals. It is produced in animals just as it is produced in a common fire, by the chemical union of two substances, called oxygen and carbon. The oxygen of the air, as it is inhaled, unites with the carbon of the food, and heat is given off to the system. Cold air contains a larger per centage of oxygen than the warm bland air of summer, and fatty oily substances contain a greater amount of carbon than vegetable or milk. Hence it is that in cold weather our appetites are keener and we crave oily substances, and a stronger diet generally. This proves

that in cold weather the air we breathe contains more oxygen, and either more food, or that which is richer in carbon, is required to preserve the natural warmth and supply the waste of the system. When there is not a sufficiency of food, the oxygen flies to the tissues of the body. The animal looses flesh, for it is being consumed like wood in a furnace, and if no food is supplied life sooner or later terminates in exhaustion."

Now all this has an important, practical bearing. In stables, or sheds even, the temperature of the air is modified and rendered warmer, consequently the air contains less oxygen and less food is required to furnish the carbon by which the natural warmth of the system is kept up. Neither are the tissues of the body called upon to supply heat, and hence no more food is required for this purpose than will replenish the natural waste of the system. Thus is the truth of the old adage exemplified, "a good shelter is half a belly full," and it will be allowed, we think, that they are much cheaper too, without taking into consideration the frequent losses by disease, and death in consequence of exposure.

The interest of every farmer, then, to say nothing of moral obligations, would be most effectually subserved by providing comfortable shelters for all his animals. That they will eat one-third less food, and increase one-third more in weight, than those fed in open yards, is proved by the results of many experiments made in this country ; besides, the waste when fed in the open air and on the gound by being trampled upon, would, in a short time, be sufficient to erect substantial shelter. We exhort every farmer who is without shelter for his stock, to take this subject into serious consideration, and lose no time in accomplishing such a humane and money-saving object. He should never forget that the growth of his animals is almost clear profit—the easiest made profit of the farm ; he should, therefore, if he would prosper, let nothing go undone that will tend to keep them continually growing and thriving till they reach maturity.

It is very frequently the case that animals are neglected till late in the fall, and sometimes until cold weather has set in

good earnest, and left to pick at the frozen herbage about the fields. Every man's experience tells him that he feels the necessity of protection and proper food more at the first appearace of winter than after the system has become habituated to the action of cold ; hence there is no time when care and attention to stock are more needed, or will repay the farmer so well for his trouble, as in late autumn and in the early part of winter.

If you allow your animals to shiver, your fortune will be shivered in consequence ; that is, the farmer who leaves his cattle to the winds, will find his profits also given to the winds. It is much easier to *keep* animals in good thrift, than to raise them after they have, for a time, been running down. Of all our domestic animals sheep are the most difficult to resuscitate after having become poor in the fall. It is, indeed, only with the best care and keeping that they can be brought again into good condition. The farmer who provides well-sheltered cotes for his sheep in winter, will soon have plenty of coats for himself and family.

The practice so generally followed, of letting colts and young cattle shirk for themselves half of the winter, or of feeding them only the refuse of the farm, is as baneful an error as can be found in our whole system of mismanagement. They are allowed the free use of a straw stack, (and that frequently half rotten from careless stacking,) liberty to roam about the fields to pick frozen grass, and sometimes are turned upon the wheat in winter. Such food affords but little nourishment. In youth there is two-fold demand for good wholesome food, first for repairing the waste of all the tissues of the body, second, for increasing the bulk. No animal will increase in bulk when kept in the manner first alluded to, for the fatty portions of the flesh are consumed to keep up the natural warmth, and the animal is verily poorer in the spring. The consequences are, a stunted growth, a gradual enlargement of the abdomen, and the animal becomes what is significantly termed *pot-bellied*—it loses its fine form, and its digestive system is very often seriously impaired.

It is very gratifying to know that there are many of our farmers who do bestow great attention and care in the rearing of stock, as the show of cattle on these grounds fully proves, and the owners of such are entitled to every commendation and support. It requires much knowledge, time and capital to introduce the most valuable breeds of any of our domestic animals, and all the encouragement should be given to such as are engaged in that laudable object. Highly meritorious is it to the breeders of the horse in this county and vicinity. The many fine animals on exhibition indicate how much that valuable animal is esteemed. The trial of the speed of our horses is, I understand, to some very objectionable, from the supposition that it is becoming subversive of the real benefits of the Society. Now, who will deny that one of the best qualities of a horse is the quickness and gracefulness of his movements, which, together with the symmetry of his form, constitute much of his excellence ; therefore it is necessary that judges should witness his ability to travel at the time of making their awards, and having set apart a particular time for such exhibitions, why need it distract attention from any other department of the exhibition. The horse is the most noble of our domestic animals, and should claim our especial attention ; a thorough knowledge of his nature and form tends to elevate our conception of the beautiful in the animal kingdom.

We should give more attention to the culture of grasses and roots ; without which it is in vain to expect we can raise the best of animals. Be assured the continued culture of wheat is fast impoverishing our land, bringing it into the same condition as vast tracts in the eastern and southern States now are—of sterility. Take warning before it is too late. Those owning marsh lands should at once commence, if not already done, to drain them ; a ditch six feet wide, and from three to four deep, will be found a good fence, as well as a drain for the water, and by dividing into ten acre fields, but few marshes but would be sufficiently dry. The wild grass will soon run out by close feeding, and the tame varieties will, if sown, take its place

without plowing. Red-top should be sown on the wetter portion, timothy on the drier, and clover and orchard grass on that which can be well drained and sub-soiled; then can the owner of such a farm profitably keep the heaviest and most improved breeds of any kinds. The climate of Wisconsin is not really an obstacle; our winters, at times rigorous, are dry and healthy for all kinds of sheep or cattle. Those having a stiff retentive sub-soil should under-drain with stone, tile, or even timber may be used to advantage; for remember, although in draining land thoroughly your purse may be drained, yet the full crops which follow will soon enrich it again.

I come now to my last proposition as a condition requisite for the permanent improvement of agriculture, and the elevation of the agriculturist to the high social position to which his contributions to the general welfare and prosperity of the State entitle him, to-wit: The business of farming must be made attractive to educated men, and the farm-house and all its surroundings pleasant to refined taste and cultivated manners.

Fruit trees, shade trees, and trees for fuel, fencing and building purposes, should be just as much an object of culture as grass or grain. They should be regarded as among the necessaries of life. They are a source of luxury—they are superlatively ornamental—they are useful for a great variety of purposes, and they are essential to the highest health and happiness of both men and domestic animals. Trees are, as far as needed, the cheapest crop the earth can yield; a few minutes of time will suffice to fix the germ in the ground—(raising from seed I have proved to be the most successful for kinds not indigenous to the soil)—and a few spare moments once or twice a year for a few years, will be all the attention required. Thereafter, drawing nutriment from the earth and air, they grow and expand for generations and centuries, with no additional trouble or labor. Let not the selfish excuse that if we plant trees, we may not personally have all the advantages or profits of them, be entertained for a moment. Let us do for others as we wish others had done for us. But enlight-

ened selfishness is true benevolence, and this would induce us to cultivate trees of various kinds.

Who does not know that a farm, other circumstances being equal, with a thrifty orchard, with here and there a beautiful grove, where the children can frolic, and where the working man can rest, fanned by the waving leaves during the noontide hour, and with scattered trees where the sheep and cattle can find shelter when the tempest rages, or the scorching sun oppresses, would be estimated, by the most rigid utilitarian or fancy farmer, as of far greater value than one destitute of those things. In all the older States, in this and other of the new States, nearly one-half of the improved farms of the country are suffering sadly for the want of the very trees the pioneers labored so hard to exterminate. Remember the destruction of forest trees in some of the European countries has reduced the land to sterility from drought. The like is observable in places on this continent.

When the trees are gone the stream dries up, the meadows and fields become parched. In their haste to be rich, the farmers killed the goose that laid the golden egg.

Among the many bounties and blessings of Providence which human beings do not sufficiently appreciate, are fruits, flowers and birds.

Fruits constitute one of our choicest luxuries as well as one of our most wholesome and most essential kinds of food.—Could our whole population have an abundance of good fruit, at all periods of life, from the cradle to the grave, we should certainly, as a people, have greater vigor and better health, while we should in all probability be comparatively free from many of the diseases which devastate civilized society at all seasons of the year, and occasionally in all places.

Were our children plentifully supplied with good fresh fruit and plain bread, in lieu of fried meats and larded short-cakes, we should hear very little of the multitudinous bowel complaints which, in the warm season, sweeps the children to their graves, as though they were only born to die, and still less of the scar-

let fevers and erysipelatous affections, which, as children are now fed, rage among our infantile population, as though their little bodies were all unsoundness and corruption. The healthy development of the human being is of far more importance than that of cattle, arts, sciences, banks, tariffs, or aught else of material character. * * It is virtually the science of sciences, the art of all arts, the proper study of all mankind. With what emotions of pride and self congratulation the thrifty farmer surveys his span of well-matched horses, his sleek, round oxen, his handsome colts, sheep and calves, even his well bred litter of pigs, and his highly cultivated poultry. All must be without spot or blemish. His solicitude for their proper care and keeping knows no bounds. He studies by day and dreams by night how best to work out the problem of physical perfection in all his domestic animals. But often, too often are his wife and children neglected. While every law of life, every condition of health is rigidly enforced in relation to all his domestic animals, all too frequently is totally disregarded in relation to his own family.

While he can display to the admiring spectator numerous head of domestic animals, sound, smooth, and beautiful, he may have half a dozen children, and not one of them exempt from the several diseases necessarily produced by the use of unwholesome food and neglect of the observance of the laws of health. Why should not the higher animal be as well cared for, so far as its animal nature is concerned, as the lower? We believe the attention of the farmers should properly be directed to the subject and have thus introduced it at this time, as a fit theme for the mind and soul of the farmers to ponder over.

The culture of fruit has been delayed too long. Do not be disheartened, although our late severe winters may have destroyed some varieties, we certainly (as our show on the ground demonstrates) can raise some worth eating even in an unfavorable season. We say to all, go and cultivate the like. Don't procure your trees from abroad; they seldom prosper. Patronize your own nurserymen whose trees are acclimated. Fruit

will become abundant when we take the necessary pains to cultivate it, and will be the most profitable crop for the farmer. One of the leading objections to fruit culture is the liability of the fruit, and even the tree to be damaged or destroyed by insects. A legion of enemies have been discovered to contend with in the shape of bugs, flies and worms, which delight to prey on their fruits, flowers, vegetables, plants, shrubs, and trees. And this indeed is a formidable obstacle. But for all this, we suspect man has only to blame his own short-sightedness, or folly, or perversity. He is destroying the birds, the natural protectors of all these things.

In the admirable arrangements of nature, the feathered songsters and game birds are intended to be the most efficient of the husbandman's helps. Not only do they in the natural order, amuse us with their gambols and entertain our mornings and evenings with the inspiring music of joy and the sweet songs of love, but they destroy, by feeding on them, the very creatures, which, otherwise, ravage our gardens and orchards and vineyards, our grain crops, our meadows, pastures and groves. * *

We would, lastly urge farmers to encourage the culture of flowers around their homesteads. It is healthful as well as beautifying; it becomes more imperative, as the wild flowers, by the increase of flocks and herds who browse on them, are fast dying out in our pastures. "The flowers which used to abound around the marshes, transforming the deadly virus into salubrious perfumes and delightful aromas; and the sun flower opens its beauteous petals and takes from the atmosphere the pestilential vapor, and returns to us its elements recompounded in the form of vital air."

The water lily, which sometimes covers the whole area of the lake, or turbid pool, and skirts the borders of our swamps, absorbs the mephitic gases, and renders them innocuous to man; and so of many other beauteous flowers, plants and shrubs which formerly adorned the landscape and enlivened the wilderness. Shall we not, then, cultivate the flowers?

Every year should witness some addition to those surroundings of our dwellings, whether flower garden, climbing flowers

and shrubs, shade trees, ornamental trees and fruit trees which do more to adorn and beautify a home, than the superfluities of the cunning workmanship of the upholster or the cabinet-maker. * * *

Farmers, and matrons of the farm house: I pray you, remember that you have other duties than the mere raising of swine and beeves, or the growing of grasses and grains. These works are your prerogative, and there is need that you perform them better than heretofore; but it is also your imperative duty to contribute to the elevation of your profession, by making the farm and the farm house an attractive and pleasant *home* for your children, and furnishing them with that knowledge, which is essential to success in their calling, as well as to an honorable position in society. The minds of the boys and girls who spend their youthful days beneath your roof demand attention. Let them not dream through the long winter evenings by your fire-side, and toil unceasingly through the long days, or, if thinking, have their whole thoughts on the bedecking of their persons with flimsy ornaments, for the youthful mind will be active for good or evil. Supply them with good publications to read, as well as send them to school; enlist their sympathy in their work, and seek to direct aright their active imaginations. Thus will you perform a holy work, and minister to the wants of a fellow being, no less than those who put bread in the house of the famishing poor. The gratitude of their hearts, when arrived at years of discretion, will repay you, for the joys of home will not be to them in after life, a a name unknown.

Buckshot.—Thorough bred—owned by Simon Ruble, of Beloit. First Prize at State Fair of 1858.

THE HORSE AND ASSOCIATIONS FOR THE IMPROVEMENT OF HORSES.

From an Address delivered at the Horse Fair at Whitewater, July 10th, 1858.

BY J. W. HOYT.

Our interest in the horse should be enhanced by the fact, that in the world's inventory of values, this animal constitutes so considerable a proportion of what is produced by the agriculturist.

The Census Report of 1850, shows the following to be the number of horses in the several states of the Union, cities and villages not included in the enumeration:

Maine,	41,721
New Hampshire,	34,233
Vermont,	61,257
Massachusetts,	42,216
Connecticut,	26,879
New York,	447,014
New Jersey,	63,955
Pennsylvania,	350,398
Delaware,	13,852
Maryland,	75,684
District of Columbia,	824
Virginia,	272,403
North Carolina,	148,693
South Carolina,	97,171
Georgia,	151,331
Florida,	10,840
Alabama,	128,001
Mississippi,	115,460
Louisiana,	89,514
Texas,	75,419
Arkansas,	60,197
Tennessee,	270,636
Kentucky,	315,682
Ohio,	463,397
Michigan,	58,506
Indiana,	314,299
Illinois,	267,653
Missouri,	225,299
Iowa,	38,536
Wisconsin,	30,179
California,	21,719
Minnesota Territory,	860
Oregon,	8,046
Total,	4,338,000

At $75 per head, this number would amount to the sum of $324,500,000, or about half the annual value of all the grain crops of the whole country.

But aside from this strictly utilitarian view of the subject, it is perfectly natural and proper, that we should become attached to those animals whose sagacity, courage, strength, fleetness, beauty, and perfect docility, have entitled them to our admiration, gratitude and even affection.

My theme, then, is no mean one, and I shall enter upon its discussion with enthusiasm --treating, in rapid succession of the history of the horse; his range of habitat and susceptibility to modifying influences; of races; of the "points" of a good horse; of the different styles for different uses; of the conditions of improvability; and finally of the means requisite to a fulfillment of these conditions.

HISTORY OF THE HORSE.

The horse is undoubtedly coeval with man—notwithstanding the earliest historic accounts of the human race make no mention of him—for it is hardly reasonable that an animal so like man in his physiological endowments, and so essential to the comfort and convenience of man, would have been withheld until the late date in the history of the world, at which he is noticed in the sacred writings, to wit: about 650 years after the flood.

The period of his first subjugation is also involved in obscurity, inasmuch as the first mention which is made of him is couched in language that implies discovered utility: "The Egyptians brought their cattle to Joseph, who gave them bread in exchange for their horses and their flocks," &c.

From the same source we also learn that horses were both ridden and driven in chariots; for Jacob, in his dying words to his children, is reported to have said: "Dan shall be a serpent by the way, an adder in the path, that biteth the horse's heels, so that his *rider* shall fall;" and afterwards, when his

body was removed to Canaan, "there went up with him both chariots and horsemen."

Profane history informs us that Sessotris, who was a king of Egypt, and probably the reigning monarch when Joseph flourished, had "twenty-seven thousand chariots of war."

So far as we have information, therefore, the horse was first subdued in the North of Africa, and thence introduced into the civilized parts of the world—for it must not be forgotten that Egypt was at that time the most enlightened nation of the earth, giving laws, art, science and religion to all the rest. And since the history which furnishes the data above-mentioned, in speaking of other animals, and in referring to those labors which are now generally performed by horses, makes no mention of them whatever, until about 1920, B. C., we are justified in concluding that up to that time they had not come into use.

Again, it is rather natural that the weaker and less spirited animals should have been subjected first, and that the horse, a large, fleet and powerful animal, should have been tried at a later period. But from this time forth their value began to be appreciated, and that paragon of ugliness, the ass, was rapidly superseded, in all those countries with which Egypt had commerce. Greece obtained them through the Thessalians, once the most famous horsemen of the world, who were originally colonists from Egypt, and took their horses with them. It was from Egypt that Solomon obtained all his horses of war, paying at the rate of 150 shekels, or about $80 per head.

It would appear, therefore, that Arabia was not the original habitat of the horse, as has been maintained by many writers. And this opinion is still further confirmed by the facts, that in all the records of battles among the Arabs, in early times, no mention is made of the horse, either as having been used, or as being included in the spoils with other domestic animals, and that, as late as the second century of the present era, horses were considered the most acceptable present that could be made to princes of Arabia; who, after they were once made acquainted with their qualities, by dint of unexampled care and skill in

their management, became the best horsemen and producers of horses in the world, retaining that distinction to this day.

The earliest mention of the horse in Great Britain, occurs in Cæsar's history of the invasion of that island, wherein we have an account of the chariots and horses, which we conclude must have been fleet, powerful and fiery, from the weight of the chariots, (which were heavy and armed with scythes,) and the fierceness with which they were driven into the firm ranks of the Roman Army.

In process of time, however, and chiefly as a result of the invasion, these horses became mixed with other breeds from all parts of the world, whence the Roman cavalry had been enrolled, and hence materially changed their character.

It was in Britain, so far as I can learn, that the horse first began to be used *in the cultivation* of the fields, the eleventh century being the earliest date at which any reference is made to the matter; and then it occurs in the form of a representation in tapestry, of a horse drawing a kind of harrow. From which fact it would appear that the ancients deemed the horse too noble an animal to be subjected to such menial service—as is still the case in some portions of Germany and Italy, where all farm work, requiring a team, is performed by a woman yoked to a jackass!

In America the horse appears to have been unknown until its introduction by Columbus, who brought over a number in 1493. So entirely strange were they to the natives, that the latter are reported to have regarded the horse and the man, who happened to be mounted, when they first beheld him, as one animal—a realization of some fabled monster, grown

> "——— into his seat,
> As he had been incorps'd and demi-natured
> With the brave beast."

The first horses brought into any part of what is now the United States, were landed in Florida in 1527, by Cabica de Vaca; all of which died from the effects of the voyage. But another and successful importation was made in 1539, by De Soto.

Any further history, however interesting it might be to the curious, must be omitted for more practically important branches of the subject.

RANGE OF HABITAT.

Technically considered, the habitat of an animal, is that portion of the world where all his faculties, physical and mental, may have free and perfected development. Some require a very hot climate and can live in no other ; others are equally imperative in their demands for a warm climate, and cannot long survive the heat of the tropics ; while a third class are not so rigidly restricted to any particular latitude or zone. The horse belongs to this last class, being found as far up as the Shetland Islands, on this side of the equator, and as far removed as Patagonia, on the other. Strictly speaking, however, this habitat is confined to narrower limits, since he does not attain to perfection except in warm climates. We have just seen that Egypt, Arabia, Persia, and Tartary, were his earlier home, and that nativity seems to have had its foundation in his physical constitution ; for if removed to a cold climate, his whole character changes. Instead of being that well-developed, symmetrical and beautiful animal he was in his native country, he dwarfs, becomes ungainly and clumsy, and puts on a warm, shaggy coat, resembling wool almost as nearly as the soft silky hair which is natural—just as the hair of the hog will change to wool if he be transported to the arctics, or the wool of the sheep change to hair if he continue but a few generations in the tropics.

These are remarkable constitutional capabilities, and beautifully demonstrate the wisdom of the Divine Author. Indeed, it is probably thus, that the great multitude of animal species came to be ; for the presumption is, and the researches of natural historians confirm the opinion, that the number of original species was even smaller than the number of what we now call genera or families—perhaps so small as to relieve the anxiety of those persons who find it so difficult to believe that grand-

father Noah could have got two of each kind into his big ship! And since those animals would give rise in their distribution, to the greatest number of species, whose possible range was the widest, we should reasonably expect several varieties of the horse. Allow me, therefore, in the next place, to call your attention to the interesting subject of the

DIFFERENT RACES.

Some natural historians reckon twenty different varieties or "breeds" of horses, but this number might with propriety be considerable increased.

First of the breeds of the old continent, then of the new. There is but little reason to believe that the *Arabian* horse was originally superior to others; but the Arab himself, was so well adapted by nature to the work of breeding and rearing the stock which came to him from Capadocia, and the circumstance of Mahomet's flight, was so calculated to blend in the minds of that wild and simple people the business with their religion, that they have produced in the course of centuries, the finest horse of which the world can boast.

There are three breeds—distinguished as the Altechi, the Kadischi, and the Kochlani; of which the first is an inferior race; the second inferior and mixed; the Kochlani alone being of the pure and regal blood, descended in direct lineage, as they contend, from the stud of Solomon. Many of these last are so perfect in their genealogy that their pedigree is traceable with a probability of correctness, through a period of five centuries.

The characteristics of the Arabian will strike every horseman as being indicative of "blood." The broad forehead, the prominent and billiant eye, small, thin ear, the prominence and definiteness of the blood vessels, the high withers and backwardly inclining shoulder-blade, the powerfully muscled fore-arm and thigh, and thin, flat, wiry leg, are prominent at a glance. But in addition to all these *points*, there is always discoverable a certain loftiness of spirit, fiery eyes, and heroic

courage, as if he were conscious of his royalty—so strangely and strikingly blended with unexampled docility, and amiability of dispositon, as to impress the beholder with the highest admiration.

That all the horses imported into this and other countries, as Arabian, however, are really such, is, to say the least, very doubtful.

THE BARB is a native of Barbary, Morocco, Fez, Tripoli, and other countries in the north of Africa, and in beauty of form, is said to surpass the Arabian, though smaller in size—usually under fourteen hands—and inferior in spirit and fleetness. It is from this breed that most of our so called Arabian horses are derived, and that the Spanish horses and their American descendants took origin.

THE BOURNON, of more central Africa, is said by some travelers to excel either of the first two described, combining the beauty of the Barb with the superior qualities of the Arabian.

THE DONGOLA, apparently native to the kingdom of that name, differs from the foregoing in being considerably larger—16 hands high—but will hardly come into much favor because of his narrow chest, flat quarters and flanks, and "carped back."

THE PERSIAN HORSE ranks in the estimation of many amateurs, next to the Arabian, to which he is indeed equal in speed, though wanting in endurance. Famous, in the days of Alexander—who thought it the worthiest gift he could bestow on his friends—he is still sacred in his native country, and the admiration of the traveler in the East. Xenophon, in his "Anbasis," gives interesting accounts of them as cavalry horses, and of the manner in which they were managed by their grooms. Proceeding eastward, we come next to the

HORSES OF TARTARY, some of which, particularly the Toorkoman, are distinguished for their powers of endurance. Many regard them as superior to the Persian. A journey of 900 miles in eleven days, has been performed by them again and

again. They are wanting in beauty, however, and will hardly be introduced into this country, or even Western Europe. His height is usually 15 to 16 hands, and the pure blood readily brings, in his own country, by reason of his endurance, 800 to 1,200 dollars.

Of all the remaining eastern breeds, the

East Indian is alone worthy of mention,—a horse which is said, in beauty and gracefulness of appearance, to equal any in the world. We know but little of them, however, except the fact of their stateliness and grandeur, although it is highly probable that importations will soon be made of them into England.

European Horses.—Among the horses of Europe, the Turkish, the Russian, the Scandinavian, the Dutch, the Spanish and the English figure prominently. The Norman and Italian, once noted, are now hardly worthy of special notice.

The Turkish Horse, which has so much improved the English breed, is a mixture of several breeds, though the Arabian and Persian predominate. Beauty, activity, and docility are the characteristics. The body is long, the crest and crupper high.

The Russian Horse, though made up of a great variety of breeds—all Europe and Asia having been levied upon for its production—has now sufficient distinctiveness to entitle it to rank as a separate breed. The famous "Bitioughine" draft horses were first produced in the province of Waroneje, and owe their weight and power chiefly to the Dutch stallions from which they sprang.

The habits of Russia have always been warlike, and accordingly, because of their heavy carriages, baggage wagons and field pieces, and the stalwart character of their lancers and other cavalry-men, the demand for heavy and powerful horses was constantly stimulated. There are several varieties.

The characteristics of the "Bitioughine" are, a "medium size, with large head, very small, brillant eyes, short neck,

broad chest, round slender back, strong, steep rump, large, leg-bones, flat hoofs, feet covered with thick hair, and long mane and tail." They are sagacious and tractable, and have great power of endurance, often being driven fifty miles without resting, at a rapid pace, and with heavy loads; are long-lived and require little care.

The "*Obvan*" horse belongs to the province of Perm, is rather small, measuring about 14 hands high as the average, is handsome, active, docile, and strong, being well adapted to agricultural uses. Color varying from a sorrel through the several shades to dark brown or even black.

The "*Viatka*" is small, but strong and hardy and well suited to the purposes of farming; sometimes confounded with the Obvan.

The "*Kazan*," a cross between the Viatka and Boshkir, is remarkable for its long mane, which hangs far below the neck.

The "*Krimean*" is distinguished for its activity and strength, and is derived from Arabian stock. For a whole day it is said to keep a full round pace over the steepest and most difficult mountain paths.

The Scandinavian Horses are all small, often not more than 12 hands high, but fleet, making twelve miles an hour with ease, beautiful and spirited, with a wonderful amiability of disposition.

German Horses differ considerably in the different kingdoms, but as a type, are heavy, strong, and rather slow. The Prussian has been much improved of late years, both in beauty of proportion and in activity. Holstein furnishes a great many fine horses to the German and French armies; and Hungary by intermixture with eastern blood, has also produced a horse of considerable value. Our best draught horses are of German origin.

The Spanish Horse acquired his fame in the days of chivalry, when

"The glorious deeds of errant cavaliers"

made both charger and knight immortal. Justice requires the statement, however, that Don Quixot's Rozinante, "*qui tantum pellis et ossa fuit*," was hardly a fair specimen of the Andalusian blood!

The horse of the chivalric period had been greatly improved by the introduction of the fine blooded Barb, to which indeed it owes its most notable qualities, though since the decline of Spain, so little attention has been paid to keeping up the blood, that the horse of the present is not very desirable.

The English Horse, previous to the twelfth century, was an ordinary, indeed rather inferior animal; but through the enterprise of King John, who imported stallions from Flanders,—and thus initiated the production of the powerful *draught horse*, now so well known throughout the world,—of Edward II, who made importations from Lombardy; and of Edward III, who introduced the finer Spanish blood, and thus originated the *roadster* and the *race horse*, which are yet more characteristic of England; through these successive and judicious importations the foundation was laid for all these breeds which have made the English horse famous. Subsequently the stock of English horses was still further improved, and, we might almost say, brought to perfection, by the mingling of pure Arabian blood.

The present English Breed of Horses is decidedly composite, being made up of nearly all other races; yet it now presents a clear type of its own, and until America went into successful competition with England, probably excelled all other countries in the production of both fancy and utilitarian horses.

Divided according to their adaptation to different uses, there is the *Thorough-bred*, (a horse designed for the turf and to sustain the national credit), the Roadster, the Hunter, the Coach Horse, the Farm Horse, the Draught Horse and so on.

The American Breeds of Horses are evidently derived from four principal sources:

The *Canadian*, familiarly known to everybody as heavy-

bodied, low, short-legged, hardy, but slow, and rather wanting in that spirit which marks many other races, was derived from France and Spain ;

The *Conestoga*, of Pennsylvania, a large, long-legged, rather ungainly looking animal, often 17 hands high, derived from Germany ;

The *English* horse, from which our best blooded horses have sprung ; and

The *Mustang*, of Mexico and South America, a rough uncouth, but hardy race, derived in the fifteenth century from Spain.

Of the special strains of horses in the United States much might be said, as indeed books have been written. I am glad to see parties waxing warm in behalf of their favorites, knowing that the result of this lively emulation will be an awakening of the public mind, not only to the respective merits of each, but also to the importance of an effort at improvement in the breeding and rearing of horses generally.

But inasmuch as it is necessary, in order to success that we have some model before the mind, I shall proceed to sketch one —not doubting that individuals here may differ with me as to what should be considered

POINTS OF THE REPRESENTATIVE HORSE.

I am aware that this is delicate ground and that in one sense the idea is absurd, since the multiplicity of uses requires a multiplicity of forms and characters ; still as there are some *men* who seem to have combined in a very remarkable manner, the greatnesses of the great, and to approach what we conceive to be a universal genius, so there are some horses which appear to be so faultless in their totality and so adapted to almost every kind of service as to entitle them to the rank of *models*.

My own notion is, that in the whole range of domestic animals, there is none which combines so many of the qualities essential to beauty and nobility as the horse—none whose nature so allies him to the human race. Behold him as he prances

over the lawn in the pride of his nobility, disdaining the earth and seeming to aspire to some lofty, heroic deed! His crest is formed into a beautiful curve, his limbs tingling with the quick flow of royal blood, have assumed the most graceful posture or motion; his sides throb with the life-pulses of a noble heart; his crimson-lined nostrils glow with ambition's fires; and his large beautiful eye, deep as the sea, yet full of kindness, is radiant with light and intelligence. Or see him again upon the war-field as he dashes upon the foe with with the fury of the whirlwind bearing the steel-clad warrior "to glory or the grave." No wonder that he became the inspiration of that grand old Arabian poet, who thus graphically described him:

"Hast thou given the horse strength? Hast thou clothed his neck with thunder? Canst thou make him afraid as a grasshopper? The glory of his nostrils is terrible. He paweth in the valley, and rejoiceth in his strength; he goeth on to meet the armed men. He mocketh at fear and is not affrighted; neither turneth he back from the sword. The quiver rattleth against him, the glittering spear and the shield. He swalloweth the ground with fierceness and rage; neither believeth he that it is the sound of the trumpet. He saith among the trumpets, ha, ha, and he smelleth the battle afar off, the thunder of the captains and the shouting."

* * * * * * *

If I were to define in general terms, what the horse should be—what his form, color, size, &c., I would say, let him be so symmetrical, that at first sight you would get no idea but that of the *toute ensemble*, as the French would say—the whole together. There should be no one feature so prominent as to attract immediate attention. He should have some decided color indicative of *mark*—either perfectly white, chestnut sorrel, deep bright bay, with black mane and tail, or a jet black; and his coat should be fine, soft and glossy. When these points were secured, then I would symmetrically enlarge or diminish the skeleton to correspond with the use to which I intended to put him; though there should of course be a limit; for after a

certain size is attained there is nothing gained by making him larger, since what might be gained in power, would be lost in activity and economy of care, and keeping. Moreover it is by no means true that the horse has strength in proportion to his size: the experience of every one present must have convinced him of this. Strength does not so much depend upon the size of the muscle, as upon the quality of its fibre and the quantity and quality of the brain, which is the seat of motive power. Still less, does strength depend on the size of the bones, as some appear to think. How often among men is the well-knit, wiry-muscled, strong-willed strippling, more than a match for the great elephantine, loose-jointed, pulpy lubber. I have done more work in the plow-field with a team whose height was fifteen hands high—day in and day out—with less fatigue to my horses, than my neighbor could possibly do with his span of elephants, seventeen hands high and large in proportion.

Were I to descend to minutiae and enumerate the essentia "points," in their order,

The head should be well proportioned to the body—not small as some horsemen insist, without regard to the dimensions of the trunk, but a little too small rather than a good deal too large, and what might be called bony. The forehead should be wide between the eyes, and full and prominent between a line connecting the eyes and the crown, giving sufficient room for a large brain; and inasmuch as the horse cannot breathe through his mouth, but is exclusively dependant upon the nasal passages, the head should also be broad just below the eyes so as to allow of those passage being large, in view of the effects of colds and catarrhs. The nostrils should be well extended and lined with crimson; the nose thin and in a right line with the head proper. The lips should be thin, the chin small; the mouth deep, the branches of the under jaw well spread at the upper angle, (which should be well rounded) so as to allow sufficient space for the larynx and consequent free breathing, though the neck be curbed, (as it never should be;) the cheek full and muscular. The eyes should be deep, full and lustrous, (without de-

vils dancing therein;) the lids thin, lashes long; the hollow above the eyes not too deep. The ears should be medium sized, thin, well curved, and with a lively motion, pretty well apart, and inclined to a position forward. The neck should be long, thin and firmly arched, with flowing silken mane; the withers elevated and not too thin; the shoulders thick, handsomely sloped, and rising pretty well back on the withers, points wide apart and well forward; the arm heavy, long, ranging perfectly with the chest; the knees large, full, clean, and pretty low down; the shank short, the tendons hard, flat and wiry; fetlock joint large and clean, ranging with the rest of the limbs; pastern oblique and just long enough to give elasticity without weakness. The hoof should be oblique but not sprawling; the crust hard and free from cracks or rings; the frog well-spread, but not so full as not to just clear the ground when the rim of the crust rests upon it. When the horse stands in a natural position, the foot should be so far forward that a perpendicular line let fall from the point of the shoulder would just touch the edge of the hoof. The chest should be deep and wide, affording room for powerful lungs. This is especially essential. The ribs should gradually swell out backward, until they reach the flank; the back short, the bones of the spine large; the tail attached high up and pretty well back; the loin broad and straight, with a decided development of muscle; the hips should be large and long; the thighs largely developed, showing the presence of powerful muscles, the hock large. Such is the horse I would demand, if the anatomist could manufacture him "to order." Some points may be deemed slightly in error by different horsemen; but the combination would hardly fail to produce a fleet, beautiful, and powerful animal.

Here, then, we have a model, which, if not too far violated, will allow of such modification as will adapt it to any particular use.

If designed for the saddle exclusively, or for a light buggy, let the proportions remain, and restrict the height to within 15 1-2 hands. If for the coach, he must of course be larger, and any

lack of fine qualities may be made up in weight and mere muscular power, sprightliness not being essential for such use; sixteen and a half hands would probably be a better height. If intended for the turf simply—as no horse ever should be—there should be as little weight as is consistent with the muscular development essential to the greatest locomotive speed.

The farmer's horse need not have so much of "blood," as nothing extraordinary is required of him; still the blood can be of no disadvantage, and while it will be a satisfaction to the owner, will also render the animal so much the more saleable if a gelding, or more valuable for breeding, if a mare.

IMPROVABILITY OF THE HORSE.

Such, then, being the end to be sought, the ideal to be desired, it behooves us in the next place to consider its attainability. Is it possible to so improve the horse that instead of the poor apologies which disgrace our country in the estimation of all who are ambitious of excellence, the fine horse shall be the rule, and the miserable *plug* the exception.

Analogy and experience both answer this question in the affirmative. Indeed all organic beings are improvable within certain limitations, but those limitations lie directly upon the line of the *perfection* of that species to which they belong.

The analogy of grains, fruits, &c., is in point; which from very mean beginnings often develope themselves under the skill of man, into the possession of every desirable quality. Thus the potato, when first *invented*, as the Scotch divines used to say, was a miserable acid tuber, unfit for even swine; and the apple with all its luscious varieties, had its origin in the sour and gnurly crab.

So also has it been with numerous *animals*. But experience has fully demonstrated the highest improvability of the horse. The matchless Arabian has already been referred to, as having probably had its origin among the ordinary breeds of Egypt.

The conditions of success are, first and last, *obedience to physiological law*, and may be classed under two heads:

1. Physiological Breeding.—Here is a subject which was once full of difficulty; nor is it yet fully settled in all its important details. Its investigation involves careful and thorough research into the intricate and only partially explicable nature of the physical and mental forces of the animal, and especially the laws of reproduction, which, by reason of their very nature are most difficult to be understood.

Nevertheless, some definiteness has been arrived at after centuries of observation, so that certain rules may be laid down, obedience to which will generally result in success.

The first great law, and that which appears to be universal, applying equally to the animal and vegetable creation, has appropriate expression in the aphorism, "like produces like." Each produces offspring "after its own kind;" and this is true not only of genera and species, but also true of individuals. Hence the theory of hereditariness—that peculiarities are transmissable from sire to son. But not only is this a law of certain leading, permanent types of character, but also of temporary influences and impressions; so that the "iniquities of the father are visited upon his children to the third and fourth generation;" not only so, but these effects may, and do, under favorable circumstances, become developed into permanent characteristics; so emphatic is the imprint of the parent upon the offspring.

Thus it is that character is often so modified, that the original traits are lost sight of for a long time, not appearing again until after several generations.

It is not necessary that I should specialize upon this point, instances will occur to every one, in which such modifications, both mental and physical, have been made.

On the other hand, it must not be forgotten that *leading* types are permanent. Take, for example, the races of men; subject them to as many new circumstances as you please, and intermix them so thoroughly that you would expect, after a few

generations, to find no trace, or least no palpable mark, of that one upon which the experiment was made. Still it remains detectable in all the progeny, and now and then crops out boldly, and declares its supremacy still.

Thus the African, which of all races seems the most readily to fade out, may be mixed with Caucasian, the Mongolian and the aboriginal, and subjected to circumstances totally different from those to which it was native, and still the close observer will detect the *blood*; and by and by, when the remote victim of that debasement begins to feel that the origin of his family is beyond all further suspicion, the crisped hair and thick lips show themselves in their midst, and suddenly confront all cherished hopes.

Here arises the difficult question: "What is the *law of improvability?*" Shall we breed in direct line, so as to develope the desirable traits of the parents? or, shall we, by crossing, aim at the introduction of new elements into the family, and the possible *production* of qualities which, before, had no existence in either of the parents?

Now, this is a question which has vexed physiologists and ethnologists from time immemorial, and is yet unsettled.

The history of the human race would seem to favor the latter theory—that of crossing; while the experience of certain careful breeders of horses and cattle is equally favorable to the system of "*breeding in and in.*" * * *

But it is not proper that this complex, philosophical question should be discussed here and now.

One thing is sure: improvement requires the use of the *best* elements. The best results in breeding horses can only be obtained by breeding *to* the best horses and *from the best mares.*

The superior quality of which sex is the most essential, is also a mooted question among scientific men. I know the popular opinion is, that if the stallion is good, it makes but little difference what the character of the mare may be—an opinion which I have never received, and am becoming every day more

convinced is not only erroneous, but most disastrously false, in view of the stupid practice which grows out of it.

The quality of the mare is just as essential as that of the horse—a truth which will strike you as being confirmed by the current maxim in human society, that "all great men were born of great mothers."

The greater reproductive power of the horse, however, as compared with the mare, that is the larger number of offspring to which he may become parent, is a sufficient explanation independent of the false notion adverted to, of why the male has received more attention than the female—*economy* would dictate that the money to be devoted to the improvement of the breed of horses, should be expended upon the male.

Practically, then we must first regard the quality of the stallion. Let the owner of the breeding mare, avail himself of the *best* horse within his reach, regardless, so to speak, of the expense. In a word, let him breed to the horse, and not to the *price*. The stupidity of those who ignore this injunction is easily made apparent by the application of figures. For example: If I pay twenty dollars for the use of a horse, and obtain a colt which at four years of age will readily sell for 200 to 500 dollars, instead of breeding to one whose price is three, getting thereby a colt saleable for 75 to 150 dollars, nothing is clearer than than that I have saved 125 to 350 dollars by the liberality of my policy, and have the pleasure of keeping the best stock, in the bargain. The keeping costs no more, necessarilly, in one case than in the other.

In the second place, we must look to the mare, and the relation which she bears to the horse as to form and general characteristics.

The Arab understands this perfectly, and accordingly thinks more of his mare, whose character, as a breeder, has been established than of all the other horses he owns—can rarely be induced to part with her, though his starving children should piteously beg for the bread the price would purchase.

Generally speaking, it is true that the stallions of the best blood have not been *large*.

The Arabian and the English Thorough Bred are notable examples. The finest specimens of the former are seldom more than fifteen hands high, and often less than fourteen; and the English Thorough Bred rarely exceeds sixteen. Indeed, I do not remember a single instance among all the fleetest horses that ever graced the turf, either in the New or the Old World, whose height, under the standard was more than sixteen hands. A moderate size appears to be essential to the greatest activity.

It is all the more essential, therefore, that the mare be pretty large—both on the account, that sufficient space is requisite for the full development of the young, and because by the imparting of her own characteristics to the colt, the proper medium size for general purposes would be better preserved.

Ample illustrations might be made of this subject by reference to some of our fine American horses, but time will not permit.

2. Proper care is also a condition of improvability.—Should the Arab (although by no means the most tender of masters,) treat his horses as most Americans treat theirs, all his obedience to correct rules of breeding would not be sufficient to the production of that noble blood which is his pride and the admiration of the world. But he *loves* his horses—often more than his children, and makes them his companions by day and by night. The service to which he puts them is never more rigorous than is regarded essential to their proper discipline and development.

In our country the case is very different. One can hardly walk the streets without having his humanity moved to sympathy with the miserable condition and suffering of the noble beast whose meek submission to do the drudgery of man, should ever strongly appeal to his most generous and kindly sentiment. There are no anathemas in the language strong enough for the brutal man who will abuse his nobler beast.

Of the details I have not time to say a word, only to insist that the Golden Rule should be applied to this quadruped genus as well as to the "neighbor" of whom Jesus spake. The Messrs. Rarey are doing a noble work, in this respect, in both the New and the Old World—demonstrating to admiring multitudes that KINDNESS IS THE GREAT LAW OF CONTROL. Their system is as sound in philosophy as it is humane in sentiment, and we wish them a hearty godspeed in their mission of peace on earth and good will to the beasts.

So much of the end to be attained and the means to be used. A few words, in conclusion, of the agents calculated to be most efficient in the use of those means.

ASSOCIATIONS FOR THE IMPROVEMENT OF THE HORSE.

This is pre-eminently an age of associational effort. Every enterprise has its organization, and none may hope for the highest success without some machinery of this sort. Art, science, political economy, morality, religion,—all these are represented before the world by societies, associations, clubs, conventions, churches, and through them, as Archmedean levers are moving the world. "*Association*" is the watch-word of the age, and we who are specially interested in the improvement of the horses of Wisconsin must join in the cry.

In many parts of Europe, hippic associations (from the Greek, *hippos*, a horse) have been in existence for years, and in some instances have resulted in important revolutions in the system of breeding. France and Russia, particularly—countries in which it is esteemed a matter of first importance to maintain an efficient cavalry force—splendid studs, of horses are kept for public use at the expense of the government. The most competent persons known are appointed to make selections from the best horses of the whole world, to prove the qualities of superior animals raised at home, and to have charge of the studs thus formed.

In a new country like ours, where there is but little individual wealth, and but a small apprciation on the part of the great

majority of horse producers of the importance of breeding none but the best for the various uses to which they are accustomed to be put, the need of such associations is even greater than in England, France and Russia, where the necessities of war have given rise to a demand for horses of superior quality, and where the wealthy nobility, owners of immense estates and numerous herds, have the needed stimulus and the requisite means for raising the best stock independent of government aid.

Suppose we had such an association, or two or three of them in Wisconsin, under the management of enterprising and competent men, who, at the expense of the company, would make judicious importations of stallions and breeding mares, and proper selections from among our own Wisconsin stock, rejecting all such as would be likely to produce other than the very best offspring; suppose, further, such association to establish the wisest regulations for training the horses so produced, thus testing and developing their powers, and then to hold an annual exhibition—either independently or in connection with the State Agricultural Fair; and who of all who hear me to-day will doubt that within ten years our horses would be worth ten millions instead of five as now?

Such associations for the improvement of neat cattle have been eminently successful in Ohio and Kentucky, and I can see no good reason why a similar organization in this State for the improvement of horses should not be productive of like results. There are men here present who are fully competent to the inauguration and successful conduct of such an enterprise, and I shall cherish the hope that the next Fair of this character that I may have the pleasure of attending will be known to this country as the First Annual Exhibition of the Wisconsin Association for the Improvement of Horses.

ABSTRACT OF REPORTS.

BAD AX COUNTY.

To the Secretary of the Wisconsin State Agricultural Society:

SIR:—This Society consists of about seventy regular paying members the present year, and over one hundred dollars has been actually subscribed and paid into the Treasury of the Society for the sole use and benefit thereof, for the year 1858.

We have bought and received a deed for ten acres of land in the vicinity of Viroqua, and the whole of the grounds are enclosed with a substantial, tight board fence, seven feet high.

The Fair for 1858 was held on the 11th, 12th, and 13th of October, on the grounds belonging to the Society; and considering the unfavorable state of the weather, was an excellent one. The proceedings were interesting, and such as to give promise of a fine display in the future, should the elements be more propitious. Whole No. Entries, 199.

RECEIPTS AND EXPENDITURES.

Receipts, in addition to gratuitous service and premiums donated,..	$104 80
Expenditures for all purposes,.....	104 05
Liabilities unpaid, exclusive of amount due on Fair Grounds,.....	300 00

The Society has incurred greater expense this year than will be annually incurred hereafter. But the result is a handsome property in Fair Grounds and permanent improvements.

The usual premiums as offered were awarded by careful Examining Committees, and appear to have given general satisfaction. It is worthy of remark in this connection, that in view of all the circumstances, nearly all the members of the Society have donated their premiums to be used to pay the workmen for building the fence, and for other unavoidable expenses.

CHAS. WATERS, *President.*

J. A. SOMERBY, *Secretary.*

CALUMET COUNTY.

To the Secretary of the Wisconsin State Agricultural Society:

DEAR SIR:—The Calumet County Agricultural Society held its Fair this year at the resdence of O. D. Fowler, of Brothertown, on the 29th and 30th days of September. Considering the youth of the Society, and the comparative newness of our County, it may be regarded a success; the following statement shows the financial condition of the Society:

RECEIPTS AND EXPENDITURES.

Total of receipts, including the State appropriation,.....	$376 75
Total of expenditures,.....	277 75
Balance in Treasury,.....	$ 99 00

At the annual meeting, held at the Chilton House, in the village of Chilton, on Wednesday, December 1st, the following persons were elected

OFFICERS FOR THE ENSUING YEAR:

L. GOODELL, *President;* T. J. POTTER, S. M. CRAWFORD and O. D. FOWLER, *Vice Presidents;* JOHN P. HUME, *Cor. Secretary;* GEO. A. JENKINS, *Rec. Secretary:* F. J. CURTIS, *Treasurer.*

Very Respectfully,
THOS. J. POTTER, *Sec'y.*

COLUMBIA COUNTY.

The Columbia County Agricultural Society was organized Novenber 19, 1851, by adopting a Constitution and By-Laws, which, with slight alterations, remain to this day.

The annual meeting for the election of officers is held at the County Seat, on the Thursday next after the meeting of the County Board of Supervisors, in November; and the principal meeting of the Executive Committee for the year, is held

at Wyocena, on the 2d Tuesday of June; at which time the Premium List and Committes of Judges are agreed upon.

This Society held its annual exhibition, for 1858, on the 23d and 24th of September, at Portage City; the citizens of that place generously furnishing and fitting the grounds, and paying to the Society the sum of $175 besides.

The weather, during the Fair, was fine, and the attendance large and enthsiastic.

Whole number of entries 316; including Morgan and Black Hawk Horses, 11; Horses of all work, 23; Durham Cattle, 12; grade and working Oxen, 22; Devon cattle, 4; Spanish Sheep, 11; long wooled and grade Sheep, 10; Swine, 2, (Suffolks); Poultry, 4; Dairy products, 8; Fruit, 30; Garden and Farm products, 51; Farm Implements, 3; Domestic Manufactures, 7; Needle Work, 50; Drawing and Painting, 24; Miscellaneous Articles, 34.

The show in the Ladies Department, and in the Fruit and Vegetable Departments, never was surpassed in the County. The stock on exhibition was also good, although the show was not so large as it should have been, and the whole affair only showed what may be done in Columbia County, when our farmers shall have determined to have the most prosperous Society and the most successful fairs in the State.

At a meeting, at the close of the Fair, the following resolutions were adopted:

Resolved, That the liberality of the citizens of Portage City, in contributing so largely toward meeting the expenses of the year, fully justified the officers of the Society in holding the exhibition in their city.

Resolved, That the manner in which the Fair Grounds have been fitted up, the taste showed in fitting up the Hall for the display of Fruit and Vegetables, and other articles there exhibited—the contribution by the ladies—the music furnished to enliven the exercise of the day, and the attention and uniform courtesy manifested, not only toward the Officers of the Society, but those contributing articles to the

exhibition, indicate that the citizens of Portage appreciate their own position, and that they are deeply interested in every enterprise which looks to the welfare and improvement of the whole County of Columbia.

Resolved, That a committee of seven be appointed by the Society to attend the State Fair at Madison on the 4th to the 8th of October, next.

The following is a true exhibit of the

RECEIPTS AND EXPENDITURES FOR 1858.

Amount of State appropriation of 1857,.....	$100 00	
Amount of Portage City subscription,.....	175 00	
Amount received for Membership and Admission tickets,....	126 00	
		$401 00
Paid in premiums,.....	170 00	
John Converse cash advanced by him to pay premiums,	107 00	
R. B. Wentworth, for printing,.....	44 00	
J. J. Guppy, for fitting Fair Ground, &c.,.....	20 00	
for postage,.....	3 50	
for books awarded as premiums,.....	56 50	
		400 00
Balance in Treasury, at the close of the fiscal year, Oct. 1,		$1 00

All premiums of one dollar, except to ladies, were paid either in copies of the *Wisconsin Farmer*, the Transactions of the State Agricultural Society, or Patent Office Reports.

HENRY CONVERSE, *Secretary*.

CRAWFORD COUNTY.

PRAIRIE DU CHIEN, Oct. 20th, 1858.

To the Secretary of the State Agricultural Society:

For the first time in the history of Crawford—one of the oldest counties in the State—a successful effort was made to organize an Agricultural Society, by the calling of a Mass Convention of the farmers, mechanics, and working men of the county, at Seneca, on the 24th day of February, 1858.

By request, Prof. J. W. HOYT, of the *Wisconsin Farmer*, was present and delivered an appropriate and eloquent address;

after which, committees having been previously appointed to prepare a draft, the following Constitution, was adopted:

[We omit the Constitution for want of space.—Ed]

The following officers were elected at the same time:

A. B. Hubbard, *President*, Freeman; Dennis Bell, Bell Centre, James Robb, Seneca, and Wm. Curtz, Prairie du Chien, *Vice Presidents;* James H. Greene, *Secretary*, Prairie du Chien; James Fisher, *Treasurer*, Eastman; S. F. Huntington, Rising Sun; Peter Hoffman, Bell Centre; Isaac Teller, Teller's Corners; John Ferrill, Marietta; Richard Dunn, Eastman; J. McClure, Prairie du Chien; Edward Davis, Towerville, *additional Members of the Executive Committee.*

On the 11th of May following, the Executive Committee held a meeting, at which time a general committee was appointed, of one member from each town in the county. The time of holding the first Annual Cattle Show and Fair, was set for Tuesday and Wednesday, the 12th and 13th days of October, 1858, and the location selected was in the town of Seneca. At the same meeting, a partial List of Premiums, to be offered upon animals and articles exhibited, was adopted, and other needful regulations made.

On the 12th and 13th days of October, the Fair was accordingly held. In the 12 classes—embracing farming implements, stock, grains, flowers, products of the dairy, garden, and farm; needlework, and the handicraft of workmen in all worthy branches of industry—there were eighty-three entries, and sixty-eight premiums awarded. The weather was exceedingly unfavorable, the times peculiarly hard, and a belief, generally entertained, that the first exhibition would be a decided failure; but the details of the Fair were carried out as nearly as circumstances would permit; an appropriate address was delivered by Mr. Geo. Cousland, of Prairie du Chien; and the four or five hundred people who were in attendance retired to their homes, at its close, abundantly satisfied with its success, and

strong in the faith that the future of the Society would be prosperous and widely beneficial.

The following is a correct statement of the receipts and expenditures of the Society, during the past year:

RECEIPTS.

Cash received on Memberships,	$89 00
donation by J. P. P. Gentil,	5 00
Ira B. Brunson,	5 00
Thomas W. Tower,	3 00
Hill and Green,	3 00
V. A. W. Merrill,	3 00
Dealton Tichenor,	2 00
from sale of honey donated by James Fisher,	2 50
Total receipts of cash,	$111 50

EXPENDITURES.

Cash paid for premiums,	$35 00
Fixing fair grounds, and for provender,	20 00
For printing,	9 00
Incidentals,	12 50
Total expenditures,	$75 50
Balance in Treasury,	$35 00

Twenty volumes of the Transactions of the Wisconsin State Agricultural Society —drawn from the State—and about ten volumes of other works, donated by the editor of the *Wisconsin Farmer*, were also distributed as premiums.

Previous to the closing of the Fair, a meeting of the members of the Society was held, when an election for new officers took place, as provided for in the Constitution as amended at a meeting held subsequent to the Convention above referred to, and the following persons were duly elected as officers of the Society for the ensuing year—to assume the duties of their positions on the first of January, 1859:

DANIEL SMOTHERURST, Seneca, *President;* E. DAVIS, Utica, A. B. HUBBARD, Freeman; —— ——, *Vice Presidents;* JAS. H. GREENE, Prairie du Chien, *Secretary.*

ADDITIONAL MEMBERS OF EXECUTIVE COMMITTEE.

DENNIS BELL, Clayton; PHILANDER GREEN, Eastman; A. E. DAVIS, Freeman; LUTHER POLAND, Marietta; D. G. Mc-

CULLOCH, Prairie du Chien; DEALTON TICHENOR, Seneca; C. D. BELLVILLE, Scott; T. W. TOWER, Utica; H. STUCKE, Wauzeka.

The above Report comprises, as near as may be, a full account of the doings of the Crawford County Agricultural Society, from the time of its organization until the present date.

All of which is respectfully submitted.

A. B. HUBBARD, *President.*

JAMES H. GREENE, *Secretary.*

DANE COUNTY.

This Society held no Fair in 1858, on account of the holding of the State Fair at Madison. The Annual Meeting of the Society was held on the 8th of December, and the officers were unanimously re-elected for 1858, to wit:

WILLIAM R. TAYEOR, Cottage Grove, *President;* L. B. VILAS, Madison, J. GREENING, Mazomanie, and J. W. HOYT, Madison, *Vice Presidents;* E. W. SKINNER, Madison, *Secretary;* J. H. B. MATTS, Vienna, *Treasurer;* WM. COLEMAN, Oregon; E. D. MONTROSE, York; and S. W. FIELDS, Fitchburg, *additional Members of the Executive Committee.*

DODGE COUNTY.

The Dodge County Agricultural Society held its Second Annual Exhibition at the Fair Grounds of the Society in Juneau, on the 22d, 23d and 24th days of September, 1858.

The following is a condensed statement of the

RECEIPTS AND EXPENDITURES FOR THE YEAR.

Received for admission tickets,	$505 77	
Annual appropriation from the State,	100 00	
		$605 77
Amount paid on premiums of 1858,	237 25	
1857,	22 00	
for other purposes,	282 59	
		541 84
Balance in Treasury,		$63 93

Pursuant to adjournment, the members of the Society met at Juneau, on the 24th of September, and elected the following persons,

OFFICERS FOR THE ENSUING YEAR.

B. FERGUSON, Fox Lake, *President;* B. F. GIBBS, Trenton; G. C. BAKER, Hustisford; and H. C. GRIFFIN, Clyman, *Vice Presidents:* ALLEN H. ATWATER, Oak Grove, *Recording Secretary;* LEWIS SAWYER, Burnett, *Corresponding Secretary;* and DAVID BARBER, of Juneau, *Treasurer.*

ALLEN H. ATWATER, *Secretary.*

FOND DU LAC COUNTY.

The Fond du Lac County Agricultural and Mechanical Society, has had a prosperous year. The interest appears to be steadily increasing, and there is an evident ambition on the part of the officers and members to give to our county rank among the best in the State.

The Annual Fair for 1858, was held at Ripon, on the 23d and 24th of September, and was certainly a sucess. The show in most of the departments was good, and the attendance large.

The address was delivered by President Pinckney, and abounded in valuable suggestions, which it would be well for all farmers to profit by. The farmers and citizens not present, lost a very fine and excellent address. At its close, Col. H. Conklin moved that the press of Fond du Lac be furnished with copies for publication; which motion was carried, amid the deafening cheers of the assembled audience.

The following is a correct statement of the

RECEIPTS AND DISBURSEMENTS.

Balance in Treasury, Jan. 1, 1858,	$188 98	
Receipts from all sources,	318 75	
		$507 73
Total of disbursements and amounts due,		545 42
Amount indebtness at close of fiscal year,		37 69

The Fair Grounds were generously provided and fitted up by the citizens of Ripon.

At the Annual Meeting held during the Fair, the following gentlemen were chosen as the

OFFICERS FOR 1859.

E. L. PHILLIPS, *President;* JAS. W. PARTRIDGE, A. OSBORNE, and J. A. ALLEN, *Vice Presidents;* W. B. RANSOM, *Corresponding Secretary;* JOHN J. METZGAR, *Recording Secretary;* and W. B. RANSOM, *Treasurer.*

JOHN J. METZGAR, *Secretary.*

GRANT COUNTY.

The friends of agriculture in Old Grant, made a grand rally this year, and have initiated a movement which will probably result in the purchase and improvement of permanent grounds for the annual exhibitions.

The Fair was held on the beautiful grounds of J. C. Holloway, at Lancaster, on the 22d and 23d of September. The weather was fine, and the people poured in from every quarter, as though a new spirit of enterprise had been infused into them. Estimates of the number varied from four to five thousand.

The total number of entries was 358, including fine specimens of blooded stock, several varieties of Grant county apples, an abundance of excellent products of the field and garden, and a fine collection of the products of domestic manufacture and works of art.

The address by Prof. Hoyt, of the *Wisconsin Farmer*, was an earnest, pointed and practical discourse, and was listened to with marked attention by a vast concourse of people.

The Treasurer's report shows a healthy state of the finances, as will appear from the following statement of

RECEIPTS AND EXPENDITURES.

Total cash received from all sources,.....	$427 00
" for premiums and expenses,.....	203 76
Balance in the treasury,.....	$123 24

The Annual Meeting for the election of officers and the transaction of other business, was held on the evening of the 23d of September, when the following gentlemen were duly elected as the

OFFICERS FOR 1859 :

HENRY UTT, of Lima, *President;* JOHN DODGE, Beetown, and EDM. HARELSON, of Lancaster, *Vice Presidents;* JOHN G. CLARK, Lancaster, *Corresponding and Recording Secretary;* THEO. M. BARBER, Lancaster, *Treasurer;* EWD. ESTABROOK, JOHN GILBERT, MIDAS K. YOUNG, J. E. DODGE and ABRAM CARNES, *Executive Committee.*

JAMES PRIDEAUX, *President.*

J. E. DODGE, *Secretary.*

GREEN COUNTY.

The Green County Agricultural Society and Mechanic's Institute held its Annual Fair, for 1858, at Monroe, on the 23d, 24th and 25th days of September.

Whole number of entries, 320 ; upon which were awarded 160 premiums.

RECEIPTS AND DISBURSEMENTS.

Total of receipts,	$391 70
To total of expenses,	353 55
Balance in the Treasury, Nov. 10th,	$ 38 15

OFFICERS.

S. M. HUMES, *President;* O. J. WHITE, *Vice President;* J. V. RICHARDSON, *Recording Secretary;* J. A. BINGHAM, *Corresponding Secretary;* THOS. EMERSON, *Treasurer;* LEVI STARR, *Superintendent.*

JEFFERSON COUNTY.

This Society held its Annual Exhibition at Fort Atkinson, on the 24th and 25th days of September.

Number of entries for premiums, 305.

RECEIPTS AND EXPENDITURES.

Total of receipts,.....	$172 00
" of expenditures,.....	157 25
Balance in Treasury,.....	$ 15 75

OFFICERS.

MILO JONES, *President*, Fort Atkinson; D. M. ASPINWALL, Farmington, and A. B. CURTISS, Jefferson, *Vice Presidents;* GEO. P. STRONG, Cold Spring, *Secretary;* GILES KINNEY, Cold Spring, *Treasurer;* and an Executive Committee consiting of one member from each town.

KENOSHA COUNTY.

The Annual Fair of the Agricultural Society of the County of Kenosha, was held on Thursday, Sept. 30th, and Friday, Oct. 1st, 1858.

The weather, the first day, was somewhat unfavorable (being rainy in the morning), and in consequence the entries were made very late, which gave the Judges quite too short a time to do full justice in all particulars—there being 334 entries in all the departments. The second day was a most beautiful one, and the largest gathering of people ever convened in this county upon such an occasion.

The address was delivered by a member of the Society—F. J. Brande, Esq., of Pleasant Prairie.

The Fair passed off pleasantly—great unanimity prevailed—all classes seemed to unite in rendering the occasion one of real usefulness and pleasure. May the Society continue in interest

as it advances in age, until the glorious advantages of this industrial association shall be felt in succeeding years, and until the different departments here represented shall have fully realized the consummation of our sanguine hopes, that the Society shall prove instrumental in developing the resources of the county in material wealth.

The following is a list of the

RECEIPTS AND EXPENDITURES.

Amount received during the year for memberships,.	$105 00	
For admission to the Fair Grounds,.....	166 32	
For licenses,.....	17 00	
Money in the Treasury at the commencement of the year,.....	147 65	
		$435 97
Paid premiums,.....	$280 50	
Paid for printing,.....	20 00	
Fair expenses,.....	20 05	
		$320 55
Balance in treasury,.....		$115 42

H. H. TARBELL, *Secretary.*

LA FAYETTE COUNTY.

To the Secretary of the Wis. State Agricultural Society:

Early in the spring of 1858, the Executive Committee of this Society prepared a liberal premium list for the Annual Exhibition, and issued the following circular in connection therewith:

Citizens of La Fayette:

Annexed we submit to you the list of premiums offered by the La Fayette County Agricultural Society, to be contested for at the second Annual Fair, which will be held in the village of Darlington, on the 21st and 23d, inclusive, of September next, and trust that it will meet with general approval.

The Executive Committee have offered over $500 in cash premiums, and, although, considering the infancy of the Society, the amount offered gives the enterprise the appearance of a bold venture, they feel assured that the Farmers and Mechanics of "Old La Fayette" are by this time fully awake to the importance of the results that may be anticipated from such an exhibition, and will strain every nerve to make the Fair, both pecuniarily and otherwise, a perfect success.

We close, therefore mith an earnest invitation to the friends of Agriculture, Horticulture and the Domestic and Mechanic Arts, everywhere, to come and assist at our Industrihl celebration, promising that no efforts will be spared for their comfort and enjoyment.

FRED. G. THEARLE, *Sec'y.*

The sequel showed that our hopes were not groundless, for although the disappointment occasioned by the unfavorable weather last year, made it almost impossible to get up the least enthusiasm on Fair matters, yet as the time approached some slight ripples of popular enthusiasm indicated that the farmers of this county felt some degree of pride in the display of agricultural products that was approaching.

The Grounds were the same that were occupied last year and had been arranged under the active superintendence of Jas G. Knight, Esq., with that good taste and efficiency for which he is so generally admired. The tent and pens were about the same size as last year, but better calculated to resist bad weather, and a Secretary's office was erected just outside the fence, between the two gates with pay and entering desks on either side. The speaker's stand was erected adjoining the tent, and everything that could add to the comfort and enjoyment of the visitors was provided.

The First Day opened with some signs of rain, but about 11 o'clock cleared up with blue sky and bright sunshine. The Secretary's office was a busy scene all day long, but the crowd on the grounds was not as large as might have been expected. The following is a list of the entries:

Horses, Mules, and Jacks,	91
Durham, Devon and Grade Cattle,	60
Sheep,	28
Swine,	19
Field, Garden and Household products,	89
Domestic Manufactures and Mechanical,	83
Fine Arts and Discretionary,	47
Total,	417

From this it will appear that the entries were more in the Cattle and Horse books than in those little items which usually fill the tent and add so materially to the interest of the exhibition. Our friend S. Blackstone, however, brought along his matchless show of Fruit; also, D. H. Clement, including some four varieties of the Siberian Crab. Frank Buckmaster exhibited a beautiful sample of Grapes and some good Fruit, also

some of the Chufas or earth almonds, the seed for which we distributed last spring. The display of fruits taken as a whole was creditable and encouraging, but nothing to what the County can do if they try. Some elegant specimens of needle work were shown, amongst which a mat entered by Miss Bennett of this village (which by some mistake was overlooked by the committee of awards) struck us as particularly beautiful. The show of Cheese, Butter, Bread, Pickles, Jellies and Molasses from the Sorgho Sucrum was creditable to our housewives and dairymen. The Cheese and butter might have been exhibited in Ohio and Orange county, N. Y., and passed muster. Among the Cabinet Ware, R. Trestrails large picture frame, and G. A. Pugh's beautiful bedstead were most prominent, whilst a neat little stand by M. Hoffmann was generally admired. The mechanics, although not exhibiting as largely as might have been expected, did well, and reflected great credit on the craft.

Second Day, notwithstanding the slight shower of the previous evening, opened as fair as heart could wish, and in obedience to the wish of many, who arrived with stock and other articles, for exhibition. the entries which had been closed at six o'clock, the previous evening, were continued open till eleven o'clock on Wednesday. It is the general opinion that the display of Horses was not as good as last year. Our worthy Treasurer had, as usual, "a leetle the fastest trotter" on the ground, and although he makes a first rate officer, and is devoted to the Society, he is not worth "shucks" for anything else, if there is anything around in shape of a horse that can go it under three minutes. There was quite a division of opinion, respecting the merits of the horse owned by Dipple, of Wiota, which took the first premium, and a Black Hawk owned by Dan Knowlton, and imported from Vermont last spring.—The first is a big, coarse horse, very gentle and well broke, suitable for draught, but the Black Hawk is all horse, shows his blood, and will, when a little older, if we are not much mistaken, be the prize horse. George Mathews' Tyrant was there, the best trained, best looking horse out, but George can't ex-

expect to take the first premium all his life. Amongst Durham Cattle, three Bulls, one from Warren, one from Wiota, and one the property of Ed. H. Gratiot, which took the first premium, were splendid creatures, in fact, all classes of stock were well represented, and the show of horned cattle could not be surpassed by any County in the State. We were well pleased to see an improvement in the show of Sheep and Swine as compared with last year. Albert Bassett, of Belmont, showed some fine Merinos, which attracted much attention—by-the-way, this Mr. B. understands how to come to County Fairs—he entered all kinds of stock, and carried off some $28 premiums. Success to him; may he come to next Fair, and bring some of his neighbors. The "long eared tribe" came out strong; some large creatures, but as regards their peculiar beauty, that is a matter of taste; still they have strong advocates, and may for general purposes supplant horses. A well broke steer, which a son of Squire Baldwin's rode from Shullsburg, duly saddled and bridled, created the greatest excitement of any thing on the ground. Our young friend afterwards hitched him to a buggy and trotted him against Col. "Lijahs" 2.40 horse, amidst the plaudits of the crowd. By noon the Awarding Committees were all got to work, and the grounds were crowded. In looking through the tent again, we noticed two handsome Stoves, with some beautiful Tin and Copper furniture, exhibited by our friends T. Nicholson & Co. Some Red Blaze and King Phillip Corn, by Dr. J. S. Kelso, which the Doctor insists will be the favorite Corn of this region.—The specimen of Syrup exhibited by Mrs. Jas. Rose, was really beautiful, rivalling in clearness and flavor the choicest New York Golden Syrup. We are informed it can be made by any farmer at the cost of twenty-five cents per gallon; the wholesale price of a similar article, has, during the last two years, been from seventy-five cents to one dollar per gallon. The show of vegetables was as might have been expected—small, but good. A model carriage, manufactured by Mr. Turner, of this village, attracted universal attention, also, the beautiful

specimens of Cooper Work, by G. W. Smith. We cannot, however, stop to itemize, or we could fill two papers with the merits of things exhibited, but must pass to notice

The Address, which was delivered in an appopriate style, by Jas. R. Rose, Esq., was a good practical discourse, suited to the tastes and understanding of the audience, and probably carried to the minds of his hearers in half an hour, more sound practical ideas than they could acquire in months from books or papers. The close attention paid to every word as it dropped from the speakers mouth evinced the deep interest of the audience who carried home with them the seeds of many valuable improvements. The Secretary then declared the award of premiums, and after an appropriate address from our worthy President C. Z. Cutting, the Second Annual Fair of the Lafayette County Agrlcultural Society came to a close.

The weather was glorious and the crowds who attended from all parts of the County, from Mineral Point and Warren, enjoyed themselves vastly, and the event which, to the officers, and all immediately interested, had been a subject of ceaseless anxiety for weeks previous, was unanimously declared a perfect success. To the President of the Society, for his unceasing attention, his urbane and gentlemanly deportment, and valuable business ideas, too much praise cannot be given, we have heard of men being born for specific offices, and unhesitatingly declare our conviction that Chauncey Cutting was born to be President of an Agricultural Society. To the efforts of the Superintendents much of the good order of the day is to be attributed, and the Secretary reports that the valuable services of P. A. Orton, Jr., and Charles Wadsworth, at the entry books, enabled that department to "run like a top" all the time. We cannot close without expressing our high opinion of the Committee on Horses from Iowa County. In the execution of the delicate and important duties confided to them, they have given more general satisfaction than is ever expected of a Horse Committee. We are convinced that the plan of exchanging Committees works like a charm. And so, notwithstanding the ef-

forts of some few selfish individuals to keep our farmers from attending, they have again shown that they look upon this as their own business, in which the local jealousies of politicians shall not interfere. They have again crowned the golden year with appropriate ceremonies, and vindicated unmistakably the great cause of Utility and Industry.

The following is a correct statement of the financial condition of the Society for the year 1858:

Balance in Treasury from last year,....	$190 00
Received for Memberships,.....	190 00
Received for Admission Tickets,.....	47 00
Received from State Treasurer,.....	100 00
Received from County Treasurer,.....	100 00
Received from sales of Lumber,.....	63 00
Total receipts for the year, ...	$600 00
DISBURSEMENTS—Total of all sums paid out,.....	451 90
Balance now in Treasury,.....	$148 10

OFFICERS.

C. Z. CUTTING, *President;* JOHN SMITH, J. S. KELSO and T. J. OVIATT, *Vice Presidents;* E. C. TOWNSEND, *Treasurer;* FRED. G. THEARLE, *Secretary;* GEO. SHELLINGER, SAM. COLE and JAMES HERKES, *additional members of Executive Committee.*

All of which is respectfully submitted.

FRED. G. THEARLE, *Secretary.*

MARQUETTE COUNTY.

This Society, having re-organized on the 20th of September, 1857, and selected officers for the ensuing year, prepared in March, 1858, a Premium List, and on the 13th, 14th and 15th days of October, held its Second Annual Fair, at Princeton.

It being late in the season, however, and the weather bad, the attendance was not large, and the number of entries only reached 165.

The following is a true account of our

RECEIPTS AND EXPENDITURES.

Amount received for Memberships,.....	$69 00
Amount received for Admission Tickets,.....	39 50
Amount received for Canvas sold,.....	7 14
Total of receipts,.....	$115 64
Total of expenditures,.....	185 13
Balance against the Society,.....	$68 49

This is certainly a rather unflattering presentation of ourselves, but we beg leave to add that we are by no means disheartened, and are resolutely determined to so order the affairs of the Society as to be able to make a more encouraging report next year.

T. CHICKERING, *President.*

J. M. FISH, *Secretary.*

PIERCE AND ST. CROIX COUNTIES IN UNION.

To the Secretary of the State Agricultural Society:

DEAR SIR:—The North Western Union Agricultural Society held its Third Annual Fair at River Falls, in Pierce county, on the 23d and 24th of September, 1858; the Fair was largely attended, and as a success, bore about the same relation to the one of the previous year as that did to the first; both the second and the third having been double the extent of the preceding ones, and have proved that our country, though new, is capable of doing anything she undertakes.

St. Croix county came up to the work nobly, her farmers, mechanics and artists, particularly from in and around Hudson, bringing in their productions in quantity, and quality, indicating that they knew how to do things up in "broad guage" style.

The members of the Society from the northern part of Pierce county, kept her reputation good in the exhibition of the larger share of stock, and grain and garden productions; both counties exhibited a large number of fine horses.

The ladies (as usual) lent the aid of their kind hearts, and willing hands, as only the ladies can; their dairy and house-

hold productions, on exhibition, were, like the Vermont "men, women, maple sugar, and horses," toasted by John G. Saxe, "exceedingly hard to beat;" and the profusion and finish of their fancy articles was a practical echo of Goethe's maxim, "strive to encourage the beautiful;" they also bore their part admirably, in making the trial of skill in performance upon the Piano one of the most attractive features of the Fair, and at the Equestrian display, proved that they were equally at home in the saddle.

The Address was delivered by Hon. M. S. Gibson of Hudson, and was of the practical kind, so desirable on such occasions.

A large number of well merited premiums were awarded, and the people of both counties feel that the increased success of the Society from year to year has proved that they can accomplish more than they at first even hoped to do.

St. Croix county has just formed a Society of her own; Pierce county will do the same immediately, and as each county will probably feel that their own interests will be all they can attend to, the Union Society will cease to exist, but in awakening an interest in these important matters in our, to be, great North West, will have nobly done her office work.

In *all* improvements, yours *earnestly*,

GEO. MAY POWELL,

Corresponding Secretary.

RACINE COUNTY.

At a special meeting of the Executive Committee of the Racine County Agricultural Society, held at Union Grove, Saturday, October 2d, 1858, Messrs. Theron Loomis, John Tapley, and D. N. Collar, were appointed a Committee to prepare for publication, the official Transactions of the Society for 1858.

From the report of this Committee, we select such portions as will illustrate the character of the 8th Annual Fair, which was held on the Society's Grounds at Union Grove, on the 28th and 29th days of September, and the condition of the agriculture of Racine county.

The Committee appointed to award premiums on Farms and Reclaimed Lands, were glad to see an increased interest manifested among the farmers of Racine County, in competing for the Farm Premiums, and make the following awards, viz:

To Jesse Ingersoll, town of Raymond, for the best cultivated Farm,.....$10
To Renssalaer Cross, of Raymond, for the second best..do.....do. 4
To John Ellis, of the town of Racine, for the best 20 acres of Reclaimed Land, 1st premium,..... 6

The reasons for the farm awards, are as follows: 1st, good judgment in the general arrangement of the farm; 2d, the fact that the fences were in good condition and taste; 3d, the excellent manner in which the fields were cultivated. We were glad to see that on these two farms the old fogy notion of *cross plowing* has been rejected, as doubling the dead furrows of the field and making numerous places for the water to collect and stand, to the injury of the growing grain.

Another interesting feature of the plowing, especially on Mr. Ingersoll's farm, was the *narrowness* of the dead furrow; instead of throwing the last furrow of each land as far as possible from each other, as is too often done, the plowing of the old land was continued with that of the new, until the furrow became a single furrow through deep plowed soil. The advantage of this method of plowing is, that it gives as strong and vigorous grain on the very verge of the dead furrow, as upon the center of the land; this, of course must greatly increase the quantity of the crop upon all ground which, from excessive moisture, requires to be plowed into narrow lands.

THERON LOOMIS,
GUSTAVUS GOODRICH,
WILLIAM STOCK. } *Judges.*

The Committee on Horses have pleasure in saying, that there was a much fairer show than at any previous exhibition.

The entries of Horned Stock, and the qualities of the animals on exhibition, show an increased determination on the part of our farmers to go into the breeding of blooded stock, particularly of Durhams and Devons. The Committee regret to say that the show of milch cows was small, and hope another year more interest in this particular will be manifested.

We are sorry to see that the interest in the Sheep Department was not as large as the importance of this stock demands; for we consider no farm fully furnished, if destitute of a flock of sheep.

The entries in lhe Swine Department were larger in number than usual, and the stock evidently superior to any former occasion, a fact which proves that our farmers are beginning to awake to the importance of this subject.

The Poultry Department was fine, the exhibition more full and breeds quite numerous and good.

The show of Grain and Vegetables exceeded that of last year, both in quantity and quality. The premium on Spring Wheat was awarded to M. K. Adland, the variety "Fife;" amount raised, 331 bushels, upon 17 1-2 acres; a portion of it was estimated to yield 30 bushels to the acre. The statement in regard to previous cultivation of the land which accompanied the sample shown was as follows: In 1856 the field was manured with barn-yard manure and planted to corn; in 1857, half of it was sowed to barley, the remainder to oats; in October last, the ground was plowed, and sowed the first of April last.

The Committee of Publication think the yield upon which the premium was awarded on Winter Wheat and Oats very small, and consider the publication of the statements which accompanied the same would not advance the science of agriculture.

Mr. Loomis, to whom was awarded the first premium, on Corn Crop, gives the following statement of the cultivation thereof: One acre last year planted to Chinese sugar cane, squash and beans. The poorer portion of the piece was light-

ly manured last spring, and the whole plowed about the first of June; was planted on the 12th with the King Phillip variety; rows four feet apart one way, and nearly three the other; plowed out once and hoed twice. The yield, as nearly as can be estimated, after having husked more than one hundred bushels, will be about one hundred and thirty bushels, liberal measure.

The award for the largest yield of Potatoes was to Mr. H. B. Trowbridge. The cultivation, &c., was as follows: Soil, black loam prairie; not manured within three years past; planted about the 1st day of May; four feet apart each way in rows; plowed twice both ways, and hoed each time. The amount of seed used was twelve bushels to the acre. Yield per acre, 225 bushels.

There seems to be, from the number of entries made, a growing interest in the Root crop, among the most important of which may be reckoned the Carrot. Mr. John Near exhibited and obtained a premium on this valuable root, the cultivation and yield of which was as follows: Land plowed early in May, lightly manured, planted in drills about fourteen inches apart; hoed but once. Yield 880 bushels to the acre.

The premium for the best Mangold Wurzel was awarded to Mr. John Scott; the sample of which was good. To the above the Committee would add that the show of vegetables was large and fine.

In the Mechanical Department, there was evidently a lack of interest, compared with previous years, and the Committee regret that so important a branch should seemingly be neglected.

The judges on Farm Implements deemed the Improved Cultivator, exhibited by Mr. Thomas Falvey, a superior implement, and highly recommend it to all farmers, particularly for fall plowing.

In the Eleventh Class, the entries were unusually numerous and added much to the interest of the exhibition.

The Twelfth Class (Ladies' Department) was well filled, and made an interesting addition to the Show.

The Fruit exhibition, though smaller than last year, was much better than might reasonably have been looked for, owing to the unfavorable season.

Your Committee would remark, that with the experience of the past, in the arrangements of our Society for the future, in our opinion, we have reached the point when we ought to be the owners of our Fair Grounds, and those, too, much enlarged above their present size. We trust the Society is of the same opinion, and that it will manifest this opinion by entering into contract for the same as soon as possible. To this we are invited by the financial condition of the Society, which was never so flattering as at present.

We are happy to state that the Society has been enabled to pay promptly all premiums and claims against it, hence we feel that our future is bright with hope, and our success no longer problematical.

The following is a true exhibit of the

RECEIPTS AND EXPENDITURES.

Amount of receipts from all sources,	$631 25
expenditures,	589 69
Balance in Treasury,	$41 56

OFFICERS.

ZEBINA BLISS, *President*, WM. TABOR, *Vice President*, THERON LOOMIS, *Cor. Secretary*, ALBERT G. KNIGHT, *Rec. Secretary*, and P. P. TABOR, *Treasurer*.

In conclusion, we would ask suggestively, if the time has not come when we should devote three days to our Annual Fair.

THERON LOOMIS,
JOHN TAPLEY,
DANIEL N. COLLAR, } *Pub. Com.*

RICHLAND COUNTY.

This Society was organized in accordance with the statute, in 1857. The first Annual Meeting was held in the Court-house in Richland Centre, on the first Thursday in December, when the following officers were elected for the year 1858:

WILLIAM DIXON, *President*, D. L. DOWNS, E. B. TENNEY and ALLEN TINKER, *Vice Presidents*, L. D. GAGE, *Secretary*, CALEB WAGONER, *Treasurer*, M. WHITCOMB, JOHN S. SCOTT and GEORGE GREEN, *Executive Committee*.

Met again on the second Wednesday in May, and appointed the town committees, prepared the Premium List, and selected judges for the several departments of the exhibition.

The Fair was well attended, notwithstanding the unpleasantness of the weather, and passed off very well.

Among the most interesting entries were fine specimens of peach and apple trees, by A. G. James, Esq.; the former having made a growth of seven feet in two years, and looking sufficiently hardy to be the ground of hope to many that even the peach may yet be enjoyed in this locality.

L. D. Gage also exhibited good specimens of apple, pear and plum trees, and garden and ornamental shrubbery; likewise, specimens of the Victoria pie-plant; one of which, this season, (open growth *from the seed*) measured 5 3-8 inches at the base of the stem.

The largest yield per acre of spring wheat reported was 20 bushels, on sod. Largest yield of corn (seed, Ohio premium,) was 127 2-3 bushels per acre.

The annual address, by Mr. Walworth of the *Observer*, was very instructive and useful—a highly meritorious production.

RECEIPTS AND DISBURSEMENTS.

Total receipts from all sources, ...	$215 00
Expenditures,	290 76
Balance against Society,	$75 76

ROCK COUNTY.

This Society held their Annual Fair in Janesville, the 28th, 29th and 30th of September, 1858.

The number of entries was 744.

RECEIPTS AND EXPENDITURES.

Amount of cash received for admission and memberships,		$1,526 16
Cash for premiums,	$852 00	
Cash for printing, fitting fair grounds, and sundry expenses,	300 00	
Payment on debt of 1857,	365 10	
Cash balance on hand,	9 06	
		$1,526 16

WINFIELD S. CHASE, *Sec'y.*

SAUK COUNTY.

To the Sec'y of the Wis. State Agricultural Society:

DEAR SIR: The following is a condensed statement of the principal doings of the Sauk County Agricultural Society for the year 1858:

The Annual Meeting of said Society was held at Baraboo, Sept. 24th, 1857, and the following officers were elected for the ensuing year, to-wit:

JOHN B. CRAWFORD, *President*, R. R. REMINGTON, *Vice President*, JAMES M. CLARK, *Secretary*, JOHN W. POWELL, *Treasurer*, and one person from each town in the county as member of the *Executive Committee.*

The Executive Committee met August 7th, 1858, pursuant to call, and appointed a committee of seven to prepare a Premium List.

James M. Clark tendered his resignation as Secretary, and Henry A. Peck was appointed in his stead.

An adjourned meeting of the Executive Committee was held August 28th, at which the report of the committee on Premium

List was adopted, and ordered to be published. The Executive Committee likewise agreed upon the time and place of holding the Annual Cattle Show and Fair, and appointed judges for the various departments of the exhibition.

The Fair came off pursuant to arrangements, on the 14th and 15th of October, at Reedsburg; and, although the weather previous to the time was stormy and unpropitious, yet the exhibition was a triumph, and one that Sauk County may well be proud of.

The first day was cold, and the roads very bad, yet the farmers flocked in, bringing their stock, fruits, vegetables, &c., and the dames and damsels brought the handiwork of their fair hands with a spirit that seemed to say, "We are determined to make the Fair a success."

The number of entries amounted to 225, which is more than that of any previous Fair. Those parts of the county which lie north of the Bluffs were well represented. It is hoped that the bad weather and roads, and not any lack of interest, prevented a larger attendance from the rest of the county. It is but justice to the people of Reedsburgh to say, that they did nobly in their zeal to make every thing pass off pleasantly, and that they deserve much credit for their generous hospitality to citizens from abroad. The works of art were exhibited in the new Presbyterian church.

The display of cattle was unusually large and good—some animals having taken premiums at the State Fair.

There were but few sheep on exhibition, but such as were there were worthy of commendation. There was also a good show of swine.

The display of horses was not large, but some very fine animals were exhibited, particularly in the class of stallions. A circular track was prepared for trials of speed, but the trotting was only ordinary.

Among the farming implements, the most noteworthy were a number of breaking stubble plows, entered by A. D. Heacock, of Logansville. They were made of Sauk Co. iron and Sauk

Co. oak, and their patterns and finish render them highly worthy of notice and trial by Sauk County farmers. The fanning mills manufactured by H. W. Curtis are well known. A cutter made by A. Nichols is a beauty, both in the design, workmanship and finish.

Among the articles of domestic manufacture, many were very fine, especially some cassimeres and flannels manufactured by John Dean & Bro., at the Baraboo Woolen Factory. It certainly is an epoch in our growing county, when we can grow the wool, card, spin, weave, dye, and finish such cloth as this referred to, and our citizens should appreciate such an institution and see that it is patronized.

The stoves, cauldrons, kettles, pig iron, &c., made by Jonas Tower, Esq., of Ironton, constituted the most notable feature of the Fair. The enterprise of Mr. Tower, the extent and facility for working the ore, the quality of the iron, the advantages of such a mine of wealth lying in our midst, and the pride and zeal we should manifest in the speedy development of such vast resources of wealth, would require much more space for their elaboration, than the proper limits of this report will allow. The timber, the iron, the salubrity of our climate the fertility of our soil, the beauty and diversity of our scenery, the extent and availability of our water power, and the central position we occupy in the State, must ultimately—and soon, if we will but do our duty as citizens—give us rank among the first counties of Wisconsin.

The variety of needle work was large and fine, and confirmed the wide reputation enjoyed by the Sauk county ladies for intelligence, taste and skill. The paintings were creditable, especially those exhibited by Mrs. Balcom, and the leatherwork frames surrounding them. But it is impossible to enumerate all that was worthy of particular mention.

The variety and quality of the fruit was such as to silence the croakers, who say that we cannot raise fruit in Sauk. Many who were at the State Fair say that they saw nothing finer there. Jas. M. Clark exhibited fifty varieties of apples; and

Mr. Waltz, of Reedsburgh, showed a great variety and fine specimens.

Short and appropriate speeches were made by Messrs. J. Mackey, A. Vanderpool, and M. C. Waite.

A vote of thanks was tendered to John B. Crawford for his zeal and efficiency in promoting the interests of the Society.

The following is a correct statement of our

RECEIPTS AND EXPENDITURES:

Balance in Treasury from '57,.....	$ 15 00	
Am't received for Membership and Admission T'kts.	108 00	
Due on subscription from village of Reedsburgh,...	25 00	
		$148 00
Incidental expenses, ...		5 89
Balance in treasury to be applied to paying prem...		$142 11

It will thus appear that our Society is a fixed fact and living institution, which, I trust, it will be the pride of our citizens to cherish and perpetuate.

H. A. PECK, *Secretary.*

SHEBOYGAN COUNTY.

The Annual Meeting of the Society was held at Sheboygan, March 10th, 1858, at which time the following officers were chosen:

W. W. Husch, *President;* H. N. Ross, H. Tidman, D. W. Gilbert, *Vice Presidents;* N. C. Farnsworth, *Secretary;* John J. Smith, *Treasurer;* D. L. Nutt, J. Whiting, R. G. Dennett, Wm. Whiffin, Wm. Ashby, *Executive Committee.*

The Annual Fair was held at Sheboygan Falls, September 21st and 22nd—at which time there were two hundred and eighty-five entries for premiums, as follows:

Sixty entries of cattle, forty-six of horses, sixteen of dairy products, sixteen of fruit, five of swine, sixty-four of articles of domestic manufacture, twenty-five of vegetables, six of plowing, nine of carriages and cutters, five of poultry, eleven of farm tools, four of cabinet wares, and eighteen of sheep.

There has been received into the treasury during the past year as follows:

From former Treasurer,	$ 00 64
From the State,	100 00
From Tickets of Membership,	171 00
From Admission,	131 63
Total,	$403 27

And there has been expended:

Making race course within the Fair ground,	$ 27 38
For repairing building, in lumber and labor,	43 77
For hay and grain,	13 00
For attending to stock, &c.,	7 00
For attending gates,	8 50
For Painting,	19 11
Amount of Premiums awarded,	211 25
Total,	$330 01
Balance in Treasury,	73 28

WALWORTH COUNTY.

To the Secretary of the Wisconsin State Agricultural Society:

SIR: In compliance with the requirements of section 4, of chapter 53, of the General Laws of the State of Wisconsin for 1858, I submit to the department over which you preside, the following report, duly certified and verified according to said section 4:

In the first place, I report that the Walworth County Agricultural Society held its annual Fair and Exhibition at its Fair Grounds, in Elkhorn, on the 29th and 30th days of September, and the 1st day of October, 1858; and I do further report, that the sum of sixteen hundred and thirty-eight dollars has been received by said Society during the year 1858, by the sale of Annual and Life Memberships Tickets, and for Admission Tickets, and that the said sum of sixteen hundred and thirty-eight dollars has been bona fide paid into the Treasury of said Society, in cash during the year 1858.

And I further report, that the official organization of said Society is at this time as follows:

President, O. PRESTON, Elkhorn; *Vice President*, S. B. EDWARDS, East Troy; *Secretary*, EDWARD ELDERKIN, Elkhorn; *Treasurer*, EDWIN HODGES, Elkhorn. Board of Managers, of one from each town in the county.

And I further report, that the principal meetings of said Society were held January 6th, 1858, for the election of officers; March 22, 1858, to appoint Judges and make out Premium Lists; and September 18, 1858, to complete the arrangements for the Fair.

And I further report, that 410 entries were made at the Annual Fair of 1858.

And I further report, that the following is a true and correct account of the total receipts and disbursements of the Walworth County Agricultural Society, for the year 1858:

RECEIPTS.

Jan. 6, 1858.	Balance on hand,		$373 07
Oct. 16, 1858.	Received for Life Membership to the date,		44 50
	Donations, John Fernley,	$15 00	
	Robert Richmond,	75	
			15 75
	Lumber sold,		5 33
	For Annual Membership Tickets, Admission Tickets and Booths,		1578 45
	Appropriation from State for 1856 and 1857,		200 00
	Total,		$2,217 10

DISBURSEEENTS.

For Premiums awarded for this and previous years,		$329 08
Record Books,		3 00
E. Elderkin's expenses to Madison,		10 00
Paid on contract for land to E. Elderkin,		400 00
Express charges,		4 75
Paid sundry persons for superintending departments, gate keeper, policemen, night watch, assistant Secretary and Treasurer,		153 00
Expenses of enlarging Fair Grounds and preparing for Annual Exhibition,		689 43
Printing for the year,		112 50
Paid for hay and oats,		44 25
Paid for ribbons,		2 40
Paid for drayage,		25
15,000 feet of lumber purchased of N. Pendleton, to cover Floral Hall, Booths, Speaker's Stand, &c., most of which is on hand, and freight of same from Racine,		150 00
Paid for Stationery, (Baker & Drake,)		3 56
Total,		$1.942 22
Balance on hand at date,		$274 78

As correctly descriptive of the Fair and its peculiar features, I take the liberty to quote from an editorial by Prof. Hoyt, who was present and delivered a valuable address on the occasion, and whom *you* will doubtless recognize as good authority.

"The Walworth County Fair, at Elkhorn, likewise fell upon as pleasant days as it is in the power of sunshine and a charming locality to produce. The last day particularly, Oct. 1st, was the fairest of the fair.

"A somewhat intimate acquaintance with the enterprising officers of the Society, together with assurances that Walworth was to be the *banner* county on Fairs, had prepared us for a fine display, and the crowded trains from Beloit and Racine, gave evidence that everybody was going to see whether the hopes of friends were not too sanguine. The village when we arrived was literally full of people. Brass bands, of which there were five in competition for premiums, were discoursing excellent music in different quarters, and several Fire and Military companies were parading up and down the streets to and from the depot, with beautiful banners, keeping alive their own excitement, and kindling the enthusiasm of every man, woman, and child within the corporation.

"We were immediately conducted to the grounds, which we found ample, splendidly fitted up, and filled to overflowing. The area of some twelve acres was bordered with stalls and pens full of some as fine stock as we have seen in the State; implements of all sorts strewed the lawn, and a very large hall near the centre of the grounds was absolutely stuffed with fruits of the earth, products of the dairy and household, and works of art. Next year we hope this hall will be elongated about a hundred feet, so that articles may be better displayed and visitors may get about with more satisfaction.

"Among the numerous articles worthy of mention, did space permit, we noticed fine premium specimens of wheat, raised by our friends E. & F. Perkins, of Spring Prairie, excellent premium cheeses, from the dairy of Messrs. S. A. & A. H. Thurston, and beautiful bread and cake made by Miss Louisa Preston, daughter of the efficient President.

"The speaker's stand, a large square, covered platform, erected in the centre of the enclosure, was ornamented with flags, and appropriate mottoes, and surrounded with seats for the multitude, which, during the address and declaring of awards thronged about to the number of five to ten thousand.

"The riding and trotting came off in the afternoon, and were witnessed by some 8,000 delighted spectators. In the trotting match, "David Hill," the same that afterward took the first premium at the State Fair, won the prize.

"Among the new features of this mammoth Fair, there are several with which we were particularly pleased. First, the grounds are fitted up in particularly *attractive* style. Secondly, premiums were offered for many things not absolutely agricultural, but well calculated, by their essentiality to a true social life, to exert a refining influence upon the too rigid and stoical farmer. We would not have the substantial products of the farm and workshop superseded by works of art, nor would we have the useful encouraged to the exclusion of the beautiful. The more the people of the town can be brought into contact with the real producers of the country, and the people of the rural districts with the refinements of city life, without either forsaking their proper sphere, the better for both; the pale-faced, aristocratic dweller in the city will learn to respect and foster that noble, primal art upon which his own existence and the life and business of the world depend; and the sturdy, hard-fisted old farmer will more fully appreciate the truth that it is not all of life—even the farmer's life—to produce fat calves and big potatoes, and plod like an ox from the cradle to the grave. Our advice, then, to all agricultural societies would be to make agriculture pre-eminent, but to avail themselves of those refining influences which, while they heighten the immediate interest of public exhibitions, also promote the amenities of the farming life.

"In addition to the five bands of music, already referred to, there was vocal music of a high order, as any of our readers who heard the 'Farmer's Home' by the Badger Club, at the State Fair, will be prepared to believe.

"Thirdly, the premiums were chiefly preservable as mementoes, consisting of silver table-ware and agricultural books. Among the latter, the Wisconsin *Farmer* appears to have been popular, inasmuch as 212 copies of the bound volumes for '56 and '57 were awarded.

"The fourth novel feature was the delivery of the silver-ware and book premiums at the time of declaring the awards. When a prize is announced it affords us pleasure to see the victor, and we think it a capital idea to call them upon the stand and let the people enjoy their modest blushes. On the occasion referred to, one young lady of 13 years, Miss L. Mary Gardner, by a strange good fortune, was called to the platform three successive times to receive prizes on best wheat bread, biscuit, worsted embroidery, each time modestly retiring amid the shouts of the multitude.

"But we are protracting our notice too far; other opportunities will occur in which to do the subject justice. The Fair was a glorious one, well worth the noble county of Walworth."

The Society has twelve acres of ground duly and properly enclosed with tight board fence six feet high, and is really, as the foregoing will show, in a very prosperous condition in every respect.

EDWARD ELDERKIN, *Sec'y.*

WASHINGTON COUNTY.

This Society held its annual Fair on the 1st of December, but we have no means of knowing what was the success of the exhibition.

The receipts and expenditures have been reported by the Secretary as follows:

Total of receipts,	$105 58
Expenditures,	81 00
Balance in Treasury,	$ 24 58

WAUPACA COUNTY.

J. W. B. Hibbard, Secretary of the Waupaca County Agricultural Society, reports that a Fair was held by the Society on the 14th and 15th days of Oct., 1858.

RECEIPTS AND EXPENDITURES.

Total of receipts for the year, including cash and books,.....	$124 50
Expenses of the year, including premiums and incidentals,.....	174 07
Balance against Society,.....	$ 49 57

WAUKESHA COUNTY.

The Annual Fair of the Waukesha County Agricultural Society, for the year 1858, was held on the 15th, 16th, and 17th days of September, at Waukesha, and is believed to have been creditable to the people and County.

From the published report of the Fair, we are enabled to make the following interesting abstract of the Reports of Judges, and an exhibit of the Fiscal Affairs of the Society:

HORSES.

John Gale's Black Hawk was adjudged the best Stallion on exhibition, but having received the first premium at a former Fair, was ruled out. The show of horses in class number one, was remarkable good—much better than the Committee ever witnessed at the Fair of the County—one which was not only a credit to the exhibitors and the Society, but the whole County.

The exhibition of single horses was very good, and as the Society award but two premiums, several very fine animals in this class, could not receive premiums among the number. The horse exhibited by Mr. Forbes, of Waukesha, for his speed, size, remarkable docility and good training, is worthy of favorable mention. Mr. Thurston, of Waukesha, exhibited a very

fine animal, which, for style and fine action, excited universal admiration.

The matched horses exhibited nothing remarkable, and could not be ranked among the best specimens of this noble animal.

There were several suckling colts, of the Black Hawk family of horses, that would have been entitled to premiums but for the inferiority of their dams; the premiums offered being for mare and colt.

The Committee called the attention of the Society to a pair of matched two year old geldings, of the Morgan breed, exhibited by C. C. Rumsey, of Washington County, their perfection of form, fine style, and good size were very remarkable for colts of that age.

CATTLE—DURHAM AND DEVONS.

The herd of cattle exhibited by Mr. J. P. Rowe, of Muskego, consisting of eighteen head of Durhams and grades, excited unusual admiration, and the Committee suggest the propriety of encouraging stock raisers to exhibit in this way. The exhibition of blooded cattle was not large, but the most of it was remarkably good, and was a great improvement over former exhibitions; the Committee would particularly call the attention of the Society, to a Devon bull, exhibited by E. M. Danforth, of Summit, three years old; and also to a yearling bull, exhibited by Judge Field, of Mukwonago, both very fine animals.

GRADES—WORKING OXEN AND MILCH COWS.

There were several animals of this class, which the Judges deemed worthy of premiums, for which no premiums were offered by the Society. Also, there were several animals wrongly entered; for instance, a yoke of oxen, entered by Mr. Robinson, of Summit, as five years old, which, in the opinion of the Judges, were only four years old, and had they been entered as such, would have received the first premium. There was not so much competition in this class as there should have been, although the exhibition was a very great improvement upon former years.

SHEEP - MERINOES AND THEIR CROSSES.

The Judges in this department reported, that the five French bucks of different ages, and five cross-bred of different ages, entered as No. 5, owing to their condition were unworthy of any premiums. To an aged Spanish buck, they awarded 2d premium.

The Committee remarked that their duties would have been performed with much greater pleasure, had there been a fair representation of the sheep of the county presented; they regret that it was not so, and trust that the farmers of Waukesha County will not permit this important branch of husbandry to languish.

The entries of Southdowns, Cotswolds and Leicesters, were fair in number, but some of those exhibited, especially the Southdowns belonging to Mr. Rowe, of Muskego, were very fine animals.

AGRICULTURAL IMPLEMENTS AND OTHER MANUFACTURED ARTICLES.

The Judges upon articles in this class were sorry to report so meagre a show of agricultural implements as to induce the inference that the farmers of the county used none; what they found, however, were the most of them, very creditable to the makers.

Mr. C. C. Olin, of Waukesha, exhibited some very fine buggies, which were all well made, convenient, and in good taste, but inasmuch as they were not manufactured by the exhibitor nor in the County, no premiums were awarded.

A sulky and harness entered by George C. Rossman, of Hartford, Washington county, were of such superior merit as to entitle them to a premium—the taste of workmanship in which could hardly be excelled

There were several plows exhibited, which were very good, indeed; some of them as well as other implements, were from the agricultural store of George H. Barrett, of Waukesha; the appearance of which will direct the farmers where to go

to purchase. One cast plow exhibited by Mr. Barnard, of Waukesha, was a very good article, and entitled to a premium.

Among the numerous straw cutters on the ground, the one exhibited by Dr. Castleman, Cumming's patent, from the manner it did its work, appears to be just what is wanted, and was awarded the first premium.

Seed-sowers were exhibited, but the committee thought them beaten by first principal, viz: "a man's right hand, especially when the wind blows."

The Washing Machines exhibited, looked as if they might do well, if they had a good chance; and the committee inferred from the fact that no premium was offered, that the Society did not think them of much use in their county.

A lot of horse shoes exhibited by John Fallon, of Waukesha, displayed good mechanism and a thorough knowledge of the anatomy of the horse's foot; no premiums offered.

A pump exhibited by Mr. Hinkley, of Eagle, the committee deemed very valuable, both on account of its efficacy in raising water, and its power in forcing the same, and, might be a great use in the country in cases of fire. They further suggest that if the power could be applied to force life and activity into some of the farmers of the county, it would be doubly valuable.

A Water Elevator entered by Mr. Breed, of Milwaukee county, affords a very cheap and easy way to raise water, and very well adapted to the wants of the country.

The display of Hardware and Cutlery exhibited by Messrs. Hanford, of Waukesha, was very good indeed.

The samples of Butter and Cheese were of excellent quality.

The articles in the department of Needle-work, &c., were numerous and of superior quality.

The show of Flowers was meagre and unworthy of so *blooming* a county.

The exhibition of Fruit was better than anticipated, especially of apples and pears, and the committee were unpleasantly prohibited from awarding a large number of premiums, for the

reason that but few had been offered by the Society. They suggest a liberal increase in the list of premiums.

The Equestrian Performance was eminently satisfactory to the committee. Mrs. Henry Crawford, of Waukesha, took the first premium on riding, and Mrs. W. J. Fox, of Waukesha, the first premium on driving.

The Plowing Match was a failure for want of plows well adapted to the prairie soil. The committee suggest the selection of green sward or a compact soil for the plowing in the future.

RECEIPTS AND DISBURSEMENTS.

Total receipts,.....	$1,119 16
Expenditures,.....	1,089 11
Balance in Treasury,.....	$30 05
Total indebtedness of Society,.....	$1,393 16
Assets,.....	215 00
Balance against the Society,.....	$1,178 16

OFFICERS.

THOS. P. TURNER, *President;* GEO. C. PRATT, *Secretary;* JOHN FORBES, *Treasurer.*

WAUSHARA COUNTY.

The report from this Society is very imperfect, showing but little of general public interest, in addition to the facts that the Annual Fair was held on the 22d and 23d days of September, and that the amount necessary to secure the appropriation from the State was actually paid into the Treasury.

WINNEBAGO COUNTY.

To the Secretary of the Wisconsin State Agricultural Society:

SIR:—The Fair of this Society for 1858, was held at Oshkosh on the 24th and 25th days of September, and was as successful as could reasonably have been expected.

Some departments of the exhibition were particularly well represented, while none were entirely deficient, and the whole affair afforded just ground for congratulation on the part of the members and friends of the Society, as may be gathered from the following account by Prof. Hoyt, who delivered the Annual Address :

"This Fair was also a success. The weather was fine, the turn out of people large and the display of articles in most of the departments highly respectable.

The grounds are just within the corporation, in a beautiful oak grove and are neatly enclosed with a substantial board fence. The Floral Tent is "bran new," and the handsomest one we have seen in the State,—will probably take the premium at the State Fair next year, should the Society think best to offer one.

The exhibition of stock was very creditable. Among other animals worthy of honorable mention, we noticed a premium cow and calf of fine blood, entered by our friend and editorial brother, Harrison Reed, Esq., late of the Neenah *Conservator*.

The Mechanical department was fairly reprosented.

Show of Fruits respectable, particularly of apples and grapes, of which last our friend Jas. L. Fisk, Esq., exhibited some as handsome specimens as were ever clustered upon the vine-clad slopes of Guerin, Longworth, or Buchanan.

In the Dairy department, Mr. Stilson was alone represented.

Of Flowers there was likewise a deficiency, and we took occasion to scold our fair friends not a little because of this neglect. Hope the time will come, when the farmers' wives will take more pains to produce these beautiful poems of nature.

The music of two brass bands added not a little to the liveliness of the occasion, and the Fair, all in all, made an impression upon our minds which we shall cherish with pleasure."

In addition to the articles usually exhibited at such fairs, we were favored with several fine specimens of Sorghum Molasses. The first premium $5, was awarded to S. Bowron, and the

second to S. Charlesworth. The following is Mr. Bowron's process of manufacture :

"After passing the cane through wooden rollers to get the juice, it is strained through a coarse linen cloth ; then boiled ten or fifteen minutes, and all skimmed off ; then strained through a fine cotton cloth ; then boiled as rapidly as possible until it is reduced to about one-third of its original bulk ; then removed and allowed to settle about twelve hours ; when it is carefully poured off to leave the sediment, and again boiled and skimmed until reduced to proper consistency. Yield, about one gallon of syrup to ten of juice."

At a meeting of the Board of Control, subsequent to the Fair, it was unanimously voted, that the thanks of this Society be tendered to Prof. Hoyt, for the very able and eloquent address delivered by him before said Society, and that a copy of the same be requested for publication with the Proceedings of the Society.

Below will be found a correct exhibit of the finances of the Society.

RECEIPTS AND EXPENDITURES.

Total receipts,...	$357 70
Expenditures,...	256 04
Balance in Treasury,...	$101 66
Due from the State,...	100 00
Total in favor of Society,...	$201 66

From which it will appear that the financial condition is "sound," although the amount of cash in the Treasury is not immensely large.

All of which is respectfully submitted,

ELI STILSON, *President.*

WM. M. GREENWOOD, *Secretary.*

WHITEWATER HORSE SHOW.

From the Whitewater Register.

On Saturday, the 10th instant, the First Horse-Show ever held in this State, came off in this village, on the grounds of the Farmers' and Mechanics' Club, and notwithstanding the insufficient notice, and the fact, consequent thereupon, that but few, comparatively, knew anything concerning it, the attendance was very large, and the show of stock highly creditable. We saw people present from every part of the county, and from some towns in Jefferson and Rock the representation was very gratifying. Our friend Watt, of the *Jeffersonian*, exhibited his good-looking and good-natured physiognomy in our sanctum at an early hour, and soon after, Hotchkiss, of the Elkhorn *Independent*, reported himself. Prof. Hoyt, of the *Wisconsin Farmer*, who had consented to read an essay on the importance of paying attention to the Breeding of the Horse, etc., was on the ground in good season, and at 10 o'clock the town began to fill up with the farmers from the neighborhood, bringing in as nice looking horses as can be shown in any county in the State of Wisconsin.

The main object of the meeting being the improvement of our stock of Horses, a Committee of three gentlemen were appointed on the ground, to examine such Stallions as might be exhibited, and to report in such manner as they saw proper concerning them. But as no Premiums were to be awarded, and as very little time was given the Committee, their Report is necessarily brief. We herewith subjoin that

REPORT.

The Committee appointed to examine the several Stock Horses exhibited on the ground at the Wisconsin Horse Show, at Whitewater, on the 10th day of July, 1853, would report, that

they have performed their duty as thoroughly as the very limited time allowed them would permit. Judging from the cursory examination they were able to make, they wish it understood that they do not pretend to decide upon the relative merits of the different horses. They saw many good ones, and below make mention of such as they deemed worthy of notice. They mention them in the order in which the memorandum was kept, with no intention of making place or priority of notice an evidence of the estimation in which they were held by the Committee.

Black-Hawks.—The Committee in this class mention favorably Mr. L. W. Cutler's Black Weasel, as a well-built, fast Stallion. His qualities as a Stock Horse are better known to people hereabout than to the Committee.

E. A. Smith's Henry Clay, is a handsomely built, fine stepping Stallion, four years old, and is undoubtedly one of the best Black-Hawks of his age in the State.

Little Thunder, owned by J. McKenzie, is a fine five year old Black-Hawk Stallion, has fine action, is well-built, and is already ranked among the "fast nags."

Black Fox, owned by F. H. Hoyt, and raised by A. Pike, is a small three year old Black-Hawk, but is very handsomely built and has good action.

Addison, owned by W. P. Benson, three years old, good size, steps well, shows signs of making a fast horse, and is a showy, handsome Stallion, very good for his age.

Thomas Lake has a fine two year old Stallion, a good colt, and fair size. Also a yearling colt—which for fine points would be hard to beat. The two were sired by Hall's Black-Hawk.

Geo. Milford, of Koshkonong, has a very fine two year old Black-Hawk colt, good size, well got up.

Fox-Hunters.—Fox-Hunter, owned by Thayer & Jaycox, is good sized, of good color, handsomely built, gets up well, and has more than ordinary speed. He may be put down as a first rate horse, one of the best.

Fox-Hunter, owned by E. S. & S. Snow, is heavy built, looks well, and appears like a very good Stock Horse.

Fox-Hunter colt, two year old, owned by E. Jacobs, is of good color, very large, and steps well. Is a good colt.

MISCELLANEOUS.—Badger-Bill, owned by C. Harris, is a large clean-limbed, good business stock horse.

Duroc, owned by M. R. Farnsworth, is known to be a good stock horse, is good blood, and has very fair action.

CHAUNCEY BAIRD, Elkhorn,
N. M. BRANCH, Whitewater,
L. C. SMITH, "

In addition to the horses mentioned in the report of the Committee, there were a large number of fine animals on the ground —good roadsters, nice family horses, and a few pairs of good well-matched horses, of which a handsome pair of blood-bays, owned by W. McDougald, of LaGrange, were perhaps the best. They were large, well-matched, splendid-looking animals—we did not see them move.

A. Gregory, of Elkhorn, showed a fine sorrel mare, a good road horse, capable of making better time than common "plugs."

R. C. Belknap, Whitewater, exhibited a good breeding mare with a fine Black Hawk colt at her side, which attracted a good deal of attention. The colt was sired by Black Weasel, and shows unmistakeable marks of blood.

Dr. Bartlett, of East Troy, drove a very fine horse, a large, powerful-built, dark-bay gelding, about five years old, and one of the handsomest horses to drive single we have seen in a long time.

Samuel Prince, Whitewater, had a pair of excellent breeding mares, light bay, well matched, and, though small, handsomely built and good steppers. He also showed a black mare with a fine colt sired by Black Fox.

Victor Egloff, Whitewater, showed his five year old gray gelding, a well got up and good stepping road horse.

Robert Kershaw, Whitewater, exhibited a fine-looking two year old mare, and a good two months old colt, Morgan blood. The colt was large and well-built, and showed his blood.

Hans Alverson, of Whitewater, showed a fine looking two year old mare, weight 975, and two fine suckling colts, sired by Duroc, very handsome.

Wm. Kinney showed the handsomest colt on the ground, or that we ever saw. He was sired by Duroc, and is good evidence of his superior qualities as a stock horse.

Besides the horses above mentioned, there were a large number on the ground of which we could learn nothing. The crowd was great, and the arrangements for obtaining information very imperfect. In fact, we did not, by any means, expect to see so large an attendance, and had not made preparations for the crowd that came.

The Address by Prof. Hoyt was listened to with earnest attention by the audience, and greeted at the close with tremendous applause.

The thing in order, after the address, was the trot for the purse of $25, open for all horses that had never trotted for a purse. There were four entries:

S. Ellis, of Palmyra, entered r. m., "Blueskin."

J. Orr, of Whitewater, entered b. g., "Ben Bolt."

Thos. Peck, of Koshkonong, sor. g., "Greenhorn."

D. Sherman, of Geneva, g. m., "Gray Lucy."

After an exciting contest and lots of fun, "Blueskin" won the race and the money in 301 1-2—tolerably good time for a green horse.

The owners of "Blueskin," Messrs. Ellis & Avery, of Palmyra, had written a challenge, but which was withdrawn before it was read. Mr. C. E. Curtice, however, read it on call, from the stand, and Mr. McKenzie announced, from the same place, that if it was intended as a challenge, he was ready to accept it, and would name "Black Weasel." The challenge was as follows:

"I am requested by the owners of the "Blueskin" mare, to state that they will match any trotting horse, now owned in Whitewater, to trot on Elkins' track, eight miles south of Janesville, two mile heats, best 2 in 3, for $200 or $500, to go any time the parties can agree upon; the forfeit to be one-half the amount they are to go for."

After the trotting match, Mr. L. W. Cutler announced from the Judges' stand, that he challenged "Blueskin" to trot mile heats, best two in three, for $300 a side; to go any time in September, over either of the Beloit courses, naming "Black Weasel," and we suppose nothing will come of the challenge.

On the whole, the day passed off well. All appeared satisfied, and those interested were convinced that an "Annual Horse Show," at this place will be amply sustained, and be productive of great good. Next year, we promise those who attend, more for their money.

TRANSACTIONS

OF THE

WISCONSIN STATE AGRICULTURAL SOCIETY

FOR 1859.

OFFICERS OF THE SOCIETY.

1859.

PRESIDENT:

J. F. WILLARD, *Janesville.*

VICE PRESIDENTS:

First District—O. F. BARTLETT, *East Troy;*
Second District.—J. V. ROBBINS, *Madison;*
Third District.—F. D. McCARTY, *Fond du Lac.*

SECRETARY:

D. J. POWERS, *Madison.*

TREASURER:

DAVID ATWOOD, *Madison.*

ADDITIONAL MEMBERS OF EXECUTIVE COMMITTEE:

ADAM E. RAY, *Little Prairie,* S. S. DAGGETT, *Milwaukee,*
DAVID WILLIAMS, *Springfield,* W. R. TAYLOR, *Cottage Grove,*
B. R. HINKLEY, *Summit,* J. E. DODGE, *Potosi,*
G. B. SALMON, *Hudson.*

EX-PRESIDENTS, EX-OFFICIO MEMBERS:

H. M. BILLINGS, E. W. EDGERTON,
HARVEY DURKEE.

EXECUTIVE MEETING.

STATE AGRICULTURAL ROOMS,
MADISON, February 7, 1859.

The Executive Committee met, pursuant to adjournment, at the State Agricultural Rooms. Present, Messrs. Willard, Billings, Edgerton, Durkee, Bartlett, Daggett, Ray, Williams, Atwood, and Powers.

President in the Chair.

Minutes of last meeting read and approved.

The Auditing Committee reported accounts audited by them since the last meeting, to the amount of $73 66. Also reported the settlement and cancellation of orders with the Treasurer to the amount of $527 77, which were passed to his credit on the Secretary's books.

The action of the committee was examined by the Executive Committee and approved.

On motion, adjourned until Tuesday morning at 9, A. M.

TUESDAY, February 8, 9, A. M.

The Executive Committee met, pursuant to adjournment. Present same members as at previous meeting.

Minutes of last meeting read and approved.

On motion, the Executive Committee proceeded to examine and award premiums on Plans of Farm Buildings, on Essays on General Farm Management and Horticulture, and also on

Field Crops, the same having been omitted at the December meeting.

The Committee first proceeded to examine the Plans of Farm Buildings, three sets of which were submitted by different competitors. After a careful comparison and discussion of their various merits and defects, Dr. Bartlett submitted the following resolution, to wit:

Resolved, That, in the opinion of the Executive Committee, no plan submitted sufficiently embodies the specifications required by the Premium List to warrant the award of a premium, although each possesses characteristic merits.

Which was unanimously adopted.

The Committee next took up the Essays on Horticulture, of which there were but two in competition. Both were read at length, and their merits were duly considered and discussed. Whereupon the following resolution was offered:

Resolved, That the Essays on Horticulture, while they embody many good ideas and suggestions, do not, either of them, come up the standard deemed necessary by the Executive Committee to render them proper manuals of instruction, as required by the terms of the Premium List, or to entitle them to the premiums offered.

The resolution was adopted.

On motion, the Committee adjourned until 2 o'clock, P. M.

TUESDAY, 2, P. M.

The Committee met pursuant to adjournment.

President in the Chair.

No Essays on Farm Management being offered for premiums, the Committee next proceeded to award the premiums on Field Crops. Of some fifteen persons who had entered for premiums, only four had reported results.

Luther Landon, of Waupun, was found to have produced the best crop of wheat, having raised thirty-four bushels on one

acre, (of the variety known as Fife); also, the best crop of corn, having produced ninety bushels of Flint, shelled, on one acre.

Accordingly the First Premiums of $10 each, were awarded to him on the said crops.

The Second Premium on Wheat was awarded to Gustavus de Neveu, of Fond du Lac, he having raised 31 1-4 bushels of Club Wheat on one acre.

Of the other competitors, only one reported method and cost of cultivation; the others were such small crops that no Premiums could, in justice to our State, be awarded them. The Committee were of the opinion that our farmers are neither very enterprising or successful in the matter of Field Crops.

On motion, the Committee adjourned until 7 o'clock, P. M.

TUESDAY, 7, P. M.

The Committee met pursuant to adjournment.

President in the Chair.

On motion the subject of the preparation of a Premium List for the Annual Fair of 1859, was taken up, and after some time had been spent therein, the Committee adjourned until 9 A. M. of Wednesday.

WEDNESDAY, Feb. 9, 9, A. M.

The Committee met pursuant to adjournment. Present same members as before.

The minutes of previous day were read and approved.

A Memorial was offered, praying the Legislature to enact a law for the protection of sheep by the taxing, &c. of dogs; which, after some amendments, was unanimously adopted.

On motion of Mr. Williams, the Committee proceeded to the appointment of the General Committee (one member from each county) as provided in the Constitution of the Society.

Mr. Williams further moved, that the Corresponding Secretaries of the County Agricultural Societies be recognized and appointed as the members *ex-officio* of said General Committee;

Which was adopted.

Resolved, That the Standing Committee of the Executive Committee be authorized to fill any vacancies that may arise in said General Committee, and also to appoint members of said Committee in Counties where no Agricultural Societies exist.

The Executive Committee then went into session on the the Premium List, and so continued until 12, M., when they adjourned till 2 o'clock, P. M.

WEDNESDAY, 2, P. M.

The Committee re-assembled at 2, P. M., and resumed the consideration of the Premium List, and the appointment of Committees of Judges.

On motion, it was resolved to adopt more thorough measures than heretofore for the testing of agricultural machines and implements submitted for competition and premiums; and for the purpose of more effectually testing the draft, the Secretary was instructed to purchase a dynamometer for the use of the Society.

On motion, Messrs. Ray, Billings, and Williams, were appointed a Committee to determine rules and regulations for a Trial of Reapers and Mowers, during the next harvest.

On motion, it was resolved to offer a premium of $100, for the best apparatus and manufacture of sugar and syrup upon the Grounds, during the Fair.

Also, appropriate premiums for the best apparatus for lights produced by burning fluid, coal, or lard oil, to be exhibited some evening during the Fair, in some appropriate public hall.

On motion, an informal ballot was taken, to determine whether there should be a Ladies' Equestrian Display; and on count, six were in favor and four opposed to such display.

After a full and free discussion of the matter, in which all present participated, a formal vote was taken by ayes and noes, which resulted as follows:

Ayes—Messrs. Willard, Billings, Ray, Daggett, Williams, Atwood and Bartlett.

Nays—Messrs. Hinkley, Edgerton, Durkee and Powers.

On motion, it was resolved to hold the next State Fair during the week succeeding Sunday the 25th day of September.

On motion, it was

Resolved, That Messrs. Willard, Billings, Hinkley, Daggett and Powers, be appointed a committee with full powers to locate and make all needful arrangements for the Fair.

Judge J. G. Knapp was invited to read a paper before the Committee upon the History and Cultivation of the Chinese Sugar Cane, and its manufacture into syrup and sugar. He responded to the call, and on concluding the reading, on motion of Mr. Williams, was voted an Honorary Member of the Society, in consideration of his valuable and extended researches upon the subject, and a copy of the paper was solicited for publication in the volume of Transactions of the Society.

On motion, the Committee adjourned until 7 P. M.

WEDNESDAY, 7, P. M.

The Executive Committee met pursuant to adjournment.

President in the chair.

On motion of Mr. Edgerton, Judge Knapp was invited to read his Essay on Sugar Cane, on some public occasion, and the Secretary was directed to solicit the use of the Assembly Hall for that purpose.

On motion, it was

Resolved, That the Secretary be directed to prepare the requisite materials for the publication of a volume of Transactions for the years 1858 and 1859, and that he solicit sound, sci-

entific articles, from good writers, on subjects of leading interest, to embody therein.

On motion the Committee adjourned till 9 o'clock, A. M., of Thursday.

THURSDAY, Feb. 10, 9, A. M.

The Committee met pursuant to adjournment. Present same members as heretofore.

President in the Chair.

The minutes of the previous day were read, and approved.

The committee appointed for the purpose, submitted rules and regulations for a Reaper Trial; which, after some amendments, were adopted.

Messrs, Ray, Williams, and Billings were appointed a Committee to make the arrangements and conduct the Trial.—They were also empowered to appoint Judges at the time of the Trial. The premiums to be awarded were GOLD MEDALS, worth $50 each.

On motion, it was

Resolved, That the Society offer Premiums for the best cultivated farms of not less than forty acres—the same to be examined by a competent committee, about the first of July next. The First Premium to be a Silver Pitcher worth $50, and the Second a Silver Goblet worth $30.

On motion, the Committee adjourned until 2 o'clock, P. M.

THURSDAY, 2, P. M.

The Committee met pursuant to adjournment.

President in the Chair.

On motion, it was

Resolved, That B. Ferguson, of Fox Lake, Col. Z. P. Burdick, of Janesville, and Jas. S. Rogers, of Burlington, be ap-

pointed the Committee to examine farms and award the premiums thereon.

Resolved, That the rules and regulations of the Committee on Premium Farms in Ohio, as published in the Premium List of the Ohio State Board of Agriculture, in the year 1853, be adopted for the guidance of said Committee.

The Executive Committee invited the Committee on Agriculture and Manufactures, of the Assembly, who were in session in an adjoining room, to meet with them for the purpose of mutual conference, and explanation of the pecuniary condition, affairs, and policy of the Society. After an hour thus spent, the Legislative Committee withdrew, apparently well satisfied that the affairs of the Society were economically, carefully, and efficiently managed for the best interests of the Agriculture of the State.

The Executive Committee then adjourned until 7 o'clock, P. M.

THURSDAY, 7 o'clock, P. M.

The Committee met pursuant to adjournment. Present, same members as before, and J. V. Robbins.

The Premium List was taken up and its revision completed. Whereupon the Committee adjourned till 9 o'clock, A. M., of succeeding day.

FRIDAY, February 11, 9 o'clock, A. M.

The Committee met pursuant to adjournment, audited their accounts for expenses, and then adjourned *sine die*.

D. J. POWERS, *Secretary*.

MEETING OF COMMITTEE OF ARRANGEMENTS.

MILWAUKEE, April 9, 1859.

The Committee of Arrangements met, by appointment, in Milwaukee. Present, Messrs. Willard, Hinkley, Daggett, and Powers.

After an examination of the proposed grounds on which to hold the Fair, and some discussion concerning the preparation and fitting of the same, on motion of Mr. Hinkley, it was

Resolved, That a sub-committee of two be appointed from the Committee of Arrangements, to more immediately take charge of the business of arranging for the Fair and complete the fitting of the Grounds.

Messrs. Hinkley and Daggett were appointed said committee, with instructions to carry out the plans and purposes of the Executive Committee in relation to the Fair.

The Committee of Arrangements then adjourned *sine die*.

D. J. POWERS, *Secretary*.

EXECUTIVE MEETING.

NEWHALL HOUSE,

MILWAUKEE, Sept. 26, 1859.

Pursuant to the requirements of the By-Laws, the Executive Committee met on the first day of the Fair, Sept. 26th, 7 1-2 o'clock, P. M., at the Newhall House, in Milwaukee.

Present, Messrs. Willard, Edgerton, Atwood, Hinkley, Daggett and Powers.

President Willard in the chair.

On motion of Mr. Hinkley, it was

Resolved, That Mr. Geo. Paddock, of Milwaukee, be made a Life Member of this Society—the amount of the fee therefor

to be adjusted at some subsequent time, by the settlement of an old unpaid premium, claimed by him: provided, that such premium shall be found to have been correctly awarded, and to still remain unpaid; but if not, then the said Paddock shall pay the usual fee of $10.

On motion of Mr. Daggett, it was

Voted, That the time for holding the annual election for officers of the Society, in conformity with the amended Constitution, be fixed on Thursday, at 8 o'clock, P. M., and that the same be held in "Parlor D.," of the Newhall House.

A list of Gatemen was then appointed, and duly certified by David Williams, Superintendent of Gates.

On motion of Mr. Hinkley, it was

Resolved, That the tickets of the Wisconsin Fruit Growers' Association be received in exchange for those of the State Agricultural Society, as in former years.

Moved, that the Milwaukee Horticultural Society have the privilege of exhibiting, free of charge, in the Floral Tent, on the Fair Grounds, on Wednesday evening during the Fair.

The motion received but one affirmative vote, and was lost.

On motion of Col. Billings, it was

Voted, to allow a discretionary premium of $25, on the mammoth ox, exhibited by E. W. Edgerton, of Summit.

Also, that the sum of $150 be paid the Hon. Abram Lincoln, of Illinois, for his expenses and Address before the Society.

After some further business of minor importance, such as the settlement of sundry small accounts, the Committee adjourned until the next evening.

But, inasmuch as a quorum failed to meet on the following evening, no session was held.

D. J. POWERS, *Sec'y.*

STATE FAIR OF 1859.

The ninth Annual Fair of the Society was held, pursuant to appointment by the Executive Committee, at Milwaukee, on the 26th, 27th, 28th, 29th, and 30th of September.

The grounds were located about one mile from the business centre of the city, with fronts upon two broad and handsome streets—Spring on the south, and ——— on the north—and, although somewhat irregular, and, on one side, a little cramped in their dimensions, they were nevertheless quite pleasant, and afforded ample accommodation, so far as space was concerned, for the numerous articles and animals on exhibition, and for the multitudes of people who attended the Fair.

The fittings were economical and measureably comfortable, though altogether inadequate to meet the just demands of exhibitors, or do credit to the Society in the estimation of those citizens of other States who have been accustomed to more substantial and even elegant buildings and fixtures—a fact which again forces upon the attention of the Society the desirableness and importance of something like a permanency of location.

The number of entries for competition and exhibition was somewhat less than the previous year—probably on account of the unusual proximity of the Illinois State Fair, which was held at Freeport, and of the U. S. Fair, at Chicago; both of which had anticipated ours by some two or three weeks, and hence drawn largely from the most populous and best producing portion of our State.

No especially new feature characterized the Exhibition, and the articles and animals shown were hardly superior to those

of former Fairs; except, perhaps, in the Stock department, which, in the estimation of some, was more worthily represented than on any similar occasion in previous years.

The show of wheat and other grains was *larger* than usual, and the specimens were such as to re-inspire the old confidence in the capabilities of our climate and soil. Pierce county was particularly well represented in this line, and set an example worthy of emulation by even the oldest counties in the State.

The Fruit Hall, considering the unfavorableness of the season, was well filled with tempting specimens of every variety grown within our borders, and reflected great credit on the persevering enterprise of the fruit growers of Wisconsin.

The display of Machinery and Implements was about as usual; presenting, however, a few new and promising inventions worthy of trial.

The weather, in the main, was very fine, but the attendance rather moderate, particularly in view of the fact that the Exhibition was in the heart of our great metropolitan city.

The receipts were a little over $5,000, and ample, with the resources in hand, to pay all premiums and outlays incident to the Fair, and other current expenses; for a detailed statement of which, the reader is referred to the records of the Annual Meeting of the Society, immediately following the Awards of Premiums and Reports of Committees.

The Annual Address before the Society was delivered by the Hon. Abram Lincoln, of Illinois, on Friday, the 30th inst., at 11 o'clock, and was universally regarded as a highly instructive and valuable production.

The Awards of Premiums were declared immediately after the Address, but the haste of their preparation so far prevented the correction of mistakes made by Judges in the several departments, as to result in no little embarrassment to the Executive Committee and dissatisfaction to some of the exhibitors; so that, for the future, it will be necessary either to further perfect the system now in use, or abolish it altogether. Any one who reflects upon the vast number of details involved in a

complete List of Awards, and the large number of persons who, in some official capacity, must have to do with the articles exhibited, cannot fail to appreciate the difficulty of getting every particular absolutely correct, and will, therefore, make generous allowances for errors that have been or may hereafter be o mmitted.

ELECTION OF OFFICERS FOR 1860.

As provided in the amended Constitution of the Society, and pursuant to appointment by the Executive Committee and a published notice by the Secretary, the Annual Election was held at the Newhall House, on the evening of Thursday, the 4th day of the Fair; when the following named gentlemen were duly and quite unanimously elected:

President—B. R. HINKLEY, of Summit.

Vice Presidents—J. I. CASE, of Racine, J. V. ROBBINS, of Burke, BERTINE PINCKNEY, of Fond du Lac.

Secretary—J. W. HOYT, of Madison.

Treasurer—DAVID ATWOOD, of Madison.

Additional Members of the Executive Committee:

H. M. BILLINGS, of Highland; J. E. DODGE, of Potosi; B. F. FERGUSON, of Fox Lake; DAVID WILLIAMS, of Springfield; S. S. DAGGETT, of Milwaukee; O. T. MAXON, of Prescott; CHAS. H. WILLIAMS, of Baraboo.

S. S. Daggett subsequently declined to serve, however, and I. A. Lapham was unanimously elected to fill the vacancy thereby occasioned.

In accordance with the provision of the Constitution which makes the three Ex-Presidents whose terms of office last expired members, *ex-officio*, of the Executive Committee, Messrs. E. W. EDGERTON, of Summit; HARVEY DURKEE, of Kenosha; and J. F. WILLARD, of Janesville, will be the said *ex-officio* members for 1860.

SYNOPSIS OF ENTRIES AT STATE FAIR OF 1859.

Horses, Mules, and Jacks,	191
Cattle,	133
Sheep,	95
Swine,	21
Poultry,	18
Field Crops,	17
Farm Products and Garden Vegetables,	130
Fruits and Flowers,	108
Dairy and Household Products, including Wines and Delicacies,	123
Farming Implements,	83
Operative Machinery,	103
Domestic Manufactures,	76
Manufactured Articles not Domestic,	179
Plain Needle, Ornamental Needle, and other Fancy Work,	88
Products of the Fine Arts,	83
Miscellaneous and Discretionary,	131
Plowing Match,	8
Trotting Match, (also included under head of horses,)	19
Equestrian Display,	8
Whole number,	1,640

REPORTS

OF COMMITTEES AND AWARDS OF PREMIUMS,

Made at the Ninth Annual Fair, held at Milwaukee on the 26th to the 30th, inclusive, of September, 1859.

LIVE STOCK DEPARTMENT.

CATTLE.

SHORT HORNS.

Judges. B. FERGUSON, - - - *Fox Lake.*
J. V. ROBBINS, - - - *Burke, Dane Co.*
J. E. DODGE, - . - *Potosi.*

The Committee on Short Horn Cattle have been pleased with the superior quality of the cattle in this department, and have made the following awards:

C. H. Williams, Excelsior, Sauk county, 1st premium on Durham bull "Paris," 5 years old,.....Engraving or $15
John Fernly, Adams, 2d do Durham bull "Blaze," 14 years old,..... 10
A. H. Cronkite, Neenah, 3d do Durham bull, "Governor,"..... 5
P. M. Perkins, Burlington, 1st do Durham bull, 1 year old,..... .. 7
Geo. Smiley, Union Church, 2d do Durham bull, 1 year old..... 5
A. V. Rudd, Windham, 3d do Durham bull, "Exchange," 1 year old,..... 3
John P. Roe, Union Church, 1st do Durham cow "Regalia," 3 years old,.. 15
Wm. Zuill, 2d do Durham cow,..... 10
John Fernley, Adams, 3d do Durham cow "Strawberry," 3 years old,..... 5
C. H. Williams, Excelsior, 1st do heifer, "Jessie," 2 years old,..... 10
C. H. Williams, Excelsior, 2d do heifer, "Bertha 2d," 2 years old,..... 7
A. V. Rudd, Windham, 3d do Durham heifer, "White Lilly," 2 years old,.. 5
C. H. Williams, Excelsior, 1st do Durham heifer, "Jenny Lind, 4th," 1 yr.. 7
John P Roe, Union Church, 2d do Durham heifer, "Royal," 1 year old,... 5
John Fernley, Adams, 3d do Durham heifer, "Miss Fairfax," 1 year old,... 3
H. Birchard, Milwaukee, 2d do Durham heifer calf,..... 3
Wm. Zuill, Johnston, 1st do Durham bull calf, "Rockingham,"..... 5
John P. Roe, Union Church, 2d do Durham bull calf, "Dandy,"..... .. 3

Respectfully submitted,

B. FERGUSON, *Ch'n.*

The following "Pedigrees" of the 1st and 2d premium animals are true copies of the original papers now on file in this office:

PEDIGREE OF BULL "PARIS."

The pedigree of this fine animal, which has taken the first prize at two successive State Fairs, will be found on page 63, of this volume. See also wood engraving, which correctly represents him, except that the horns should point forward and downward, instead of backward and upward.

PEDIGREE OF "ROMEO."

Bred by P. M. Perkins, of Burlington, Wis.; calved Oct. 17th, 1857; color, red and white; dam, Empress. Empress was sired by Montgomery; he by Agricola, out of Georgia—dam, Clara; she by Agricola, out of Victoria.

For more extended pedigree see where the above named ancestors are registered in American Herd Book. Empress was bred by William Neff, Yellow Springs, Ohio.

[Signed,] P. M. PERKINS.

DEVONS, HEREFORDS, AYRSHIRES, ALDERNEYS, AND CROSSES OF BLOOD CATTLE.

Judges. { JOSEPH SPAULDING, - - *Harmony.*
J. J. VANKIRK, - - - ——
E. O. RUDD, - - - *Reedsburgh.*

This Committee, we are sorry to say, made no written report. There is an evident increase in the number of Devons, particularly, from year to year, and we would have been especially glad of a report on the relative merits of this breed. The following is the list of awards:

A. Richmond, Whitewater, 1st premium on Devon bull, 3 years old and over, $15
L. A. Stewart, 2d do Devon bull, "Duke of Marlboro," 10
A. H. Taggart, Delavan, 3d do Devon bull,..... 5
O. C. Hall, Richmond, 1st do Devon bull, 2 years old and under 3,..... 10
G. Goodrich, Whitesville, 2d do Devon bull, 2 years old and under 3,..... 5
Luther Rawson, Oak Creek, 1st do Devon bull "Dick," 1 year old,..... 7
Luther Rawsom, Oak Creek, 2d do Devon bull "Bill," 1 year old and under 2, 5
L. B. Potter, Wauwatosa, 3d do Devon bull, yearling,..... 3
E. M. Danforth, Summit, 1st do Devon cow, 3 years old and over,... ... 15
A. Richmond, Whitewater, 2d do Devon cow 3 years old,.... 10
L. A. Stewart, 3d do Devon cow "Juno 5th," 3 years old and over,..... 5
Julius H. Kimball, Kenosha, 1st do Devon heifer, 2 years old,..... 10
J. D. Benedict, Bristol, 1st do Devon heifer "May Queen," yearling,..... 7
E. M. Danforth, Summit, 1st do Devon heifer calf,..... 5
Luther Rawson, Oak Creek, 2d do Devon heifer calf,..... 3
F. A. Sprague, Eagle, 1st do Devon bull calf, 5 months old,..... 5
J. D. Benedict, Bristol, 2d do Devon bull calf "Plato," 4 months old,..... 3
John Foley, Milwaukee, 2d do (Durham and Devon) cross bull,..... 10
Peter F. Boss, Milwaukee, 3d do (Durham and Hereford) cross breed bull, 3 years,..... 15
Wm. M. Williams, Oak Creek, 2d do cross cow, 4 years,..... 10
Wm. M. Williams, Oak Creek, 3d do same,..... 5
John Foley, Milwaukee, 2d do (Durham and Devon) cross calf,..... 3

PEDIGREE OF "DUKE OF MARLBORO."

Bred by Lewis F. Allen, Black Rock, N. Y., was calved in February, 1855; got by imported Quartby, (284) out of Sappho 3d, by Rover, (353); grand dam, Sappho 1st, by Eclipse, (191); great grand dam, by imported Anchises, (140); gr. gr. g dam, by Bolivar, (bred by William Thompson, of Baltimore, by Garrick, imported by Mr. Thompson, from Mr. Child, of Kinlet, England,) gr. gr. gr. g. dam, Susan, by imported Denny *alias* Fauras, (320) from Norfolk, England; gr. gr. gr. gr. g. dam, Nancy, (bred by the Earl of Leicester, Norfolk, England,) and imported by Mr. Patterson, of Baltimore, father of Mrs. Jerome Bonaparte.

See Davie's Devon Herd Book, Vol. 2d, for the names by numbers affixed to the foregoing Pedigree.

[Signed.] L. A. STEWART.

Certificate of Lewis F. Allen.

Duke of Marlboro, the Bull whose pedigree is given in the previous part is the best Bull I ever bred, during my twenty-three years breeding of Devon cattle. He is from a family of deep Milkers, his dam usually giving in the best of her season, twenty-four quarts of milk per day, on grass only. Her family are of high quality, and that quality uniform throughout. They have always taken high prizes whenever exhibited, and one of them took the hundred dollar prize at the United States Cattle Show, at Springfield, Ohio, in October, 1854. A bull of the same family, two years old, took the first prize of eighty dollars at the same Show, and Duke of Marlboro took the first prize as a yearling bull at the Ohio State Show in Cleveland, in 1856, in a close and large competition. Rover, (353), took the first prize at the New York State Agricultural Show, at Auburn, in 1846.

I have this day sold the aforesaid bull, "Duke of Marlboro," to L. A. Stewart, Esq., of Buttes des Morts, Wisconsin.

LEWIS F. ALLEN.

BLACK ROCK, June 3d, 1857.

PEDIGREE OF "BRITTAIN."

Sire, Chunggacook; gr. sire, Uncas, gr. gr. Sire, Megenticook. Dam, Effie; g. dam, Celeste; gr. gr. dam, Camella Scott; gr. gr. gr. dam, Victoria, by Dibble Bull, who was imported by Mr. Vernon, Genessee County, New York; gr. gr. gr. gr. dam, Sophia, bred by Messrs. Beck & Garbutt, Wyoming County, New York. She won the first premium, at the New York State Fair, at Rochester.

[Signed.] GUSTAVUS GOODRICH.

PEDIGREE OF COW "CORA."

"Cora" was bred by Mr. Geo. Patterson, of Baltimore, Md. "Cora" was sired by "Baltimore," and he by "Herod" (214 of Herd Book); dam, a thorough-bred cow, "Ida," bred by Mr. Patterson, from imported stock.

[Signed.] E. M. DANFORTH.

PEDIGREE OF DEVON HEIFER "MAY QUEEN 2D."

"May Queen 2d," was out of "May Queen," sired by "Curly," imported by Mr. Patterson, of Baltimore.

May Queen, was bred by A. Remington, of Otsego, N. Y., and is now owned by me.

[Signed.] J. D. BENEDICT.

PEDIGREE OF HEIFER CALF "CINDERELLA."

"Cinderella" was sired by the thorough-bred Devon Bull, "Nero 2d." Her dam was the Devon Cow, "Cora," (see pedigree.)

Nero 2d, was sired by the thorough-bred Bull, Baltimore 2d; he, by Herrod. (214) *See Herd Book.* His dam was sired by Baltimore 1st, and he by Eclipse. (191) *Herd Book.*

"Nero 2d," was bred by Geo. Patterson, of Baltimore, Md.

[Signed.] E. M. DANFORTH.

PEDIGREE OF DEVON CALF "PLATO."

Plato was breed by Horace Capron, of Illinois. His dam is a full blood cow raised by Capron from stock imported by Mr. Patterson, of Baltimore. He was sired by "May Boy," imported by Wainwright, of New York.

[Signed.] J. D. BDNEDICT.

GRADE CATTLE, WORKING OXEN AND MILCH COWS.

Judges,.. RICHARD RICHARDS, - - *Racine.*
IRA BLOOD, - - - - *Vernon.*
BERTINE PINCKNEY, - - - *Fond du Lac.*

Your Committee have endeavored with the best of their ability to do justice to all parties concerned. Many embarrassments have grown out of the fact that the cattle which they were required to examine, were scattered throughout the different classes embraced in your Premium List—an error which should be studiously avoided in the future. The following is a list of the awards:

H. Beckwith, Oak Grove, 1st premium on grade cow, 4 years old,. $10
John P. Roe, Union Church, 2d do grade cow, "Ada,".....do..... 7
J. B. Dousman, Milwaukee, 3d do grade cow, "Lucy,"..... 5
H. Beckwith, Oak Creek, 1st do grade heifer, 2 years old,.... 5
A. W. Randall, Windham, 2d do....do.....do.....
John Reynolds, Greenfield, 1st do yoke working oxen,..... 10
Joshua Thayer, Palmyra, 2d do..... ..do..... 7
Luther Rawson, Oak Creek, 3d do.....do..... 5

GRADE CATTLE, WORKING OXEN, ETC.,—(continued.)

G. Goodrich, Whitesville, 1st do grade steers, 3 years old,..... 7
H. Beckwith, Oak Creek, 2d do.....do.....do..... 5
Luther Rawson, Oak Creek, 1st do yoke grade steers, 2 years old,..... 5
T. K. Carr, Oak Creek, 1st do yoke grade steers, 1 year old,..... 3
L. B. Potter, Wauwatosa, 2d do.....do.....do..... 2
T. K. Carr, Oak Creek, 1st do grade milch cow,..... 15
L. B. Potter, Wauwatosa, 2d do grade milch cow, "Flora,"..... 10
H. J. Monroe, 1st do yearling heifer calf, Devon grade,..... 5
E. W. Edgerton. Waterville, discretionary premium on big steer,..... 25
Joel Hayman, Oak Creek, 1st prem. on fat steer, 4 years old,.. 5
J. B. Dousman, Milwaukee, discretionary premium on twin grade Durham steers,..... 3
J. D. Benedict, Bristol, discretionary prem. on good heifer, 1 year old,... 3

The big steer "Dan," exhibited by Mr. Edgerton, of Summit, is a noble animal, and highly creditable to our State. The Committee recommend him to your consideration.

RICHARD RICHARDS, *Ch'n.*

HORSES.

BLOOD, MORGAN, BLACK HAWK, AND CARRIAGE HORSES.

Judges,.. { MARTIN FIELD, - - - - *Mukwonago.*
H. M. BILLINGS, - - - *Highland.*
JOHN P. DIXON, - - - - *Janesville.*

The show of horses in this department was good. The Committee have attended to their arduous duties as faithfully as they could under the circumstances, and have awarded the following Premiums:

Jas. H. Rogers, Milwaukee, 1st premium on stallion, "Wisconsin Medoc," $30
T. Chester Cox, Delafield, 1st do Black Hawk stallion, 3 years old,..... 10
H. Chase, Milwaukee, 1st do Gazelle Morgan stallion, 3 years old,..... 10
E. A. Hale, Milwaukee, 1st do Morgan stallion, 4 years old,..... 20
D. E. Braisted, Fond du Lac, 1st do Black Hawk stallion, "Ticonderoga," kept for mares within the State,..... 20
Edward Hackett, Milwaukee, 1st do Black Hawk stallion, 2 years old,.... 5
Geo. Vaughan, 1st do Black Hawk stallion, 1 year old,..... 3
Solomon Hutson, Janesville, best pair matched carriage horses,..... 20
Geo. Gernon, Waukesha, best single carriage horse,..... 10
Geo. O. Tiffany, Milwaukee, 2d best saddle horse, "Jno. Rarey,"..... 5
P. A. Woodruff, Oconomowoc, 2d best carriage horse,..... 5
E. Cramer, Milwaukee, 2d best pair matched carriage horses,..... .. 15
W. H. Clark, Watertown, 2d premium on "Brown Morgan,"..... 15
E. Enos, Waukesha, 2d do Black Hawk stallion, 1 year old,..... 3
John Hactsel, Raymond, 2d best Morgan stallion "Frank," 3 years old,.. 5
John Gale, Merton, 2d best Black Hawk stallion, "Daniel Webster," 3 years old,..... 5
Wm. Barry, Honey Creek, 2d best Black Hawk stallion, "David Hill," kept for mares within the State,..... 15

Norman Greene, of Beloit, showed a fine horse, ("Bell Founder,") but inasmuch as it appears from the pedigree that he was sired by "Ohio Bell Founder," a trotting horse of great merit, but not a *Thorough Bred*, the Committee have not felt authorized to award him a premium under the class in which he was entered. They have pleasure in declaring him to be a very highly bred horse, of superior merit, and in commending him to the breeders of Wisconsin.

MARTIN FIELD, *Ch'n.*

PEDIGREE OF "WISCONSIN MEDOC."

Wisconsin Medoc, was sired by Kentucky Medoc—his dam byBertrand; grand dam by Director; great grand dam by imported Financier; great-great grand dam by imported Certorious; great-great-great grand dam by imported Clockfast.

Kentucky Medoc, was raised by John C. Stevens, of New York, and sold when four years old, to Col. Buford, and the Hon. Henry Clay, for $10,000; was sired by American Eclipse; his dam, Maid of the Oaks, by imported Expedition; grand dam, old imported Maid of the Oaks.

[Signed.] ANDREW DUNN.

PEDIGREE OF "GAZELLE MORGAN."

Gazelle Morgan was sired by Comet Morgan, brought from Vermont, by myself, Sept. 1853. G. s. Comet, or Billy Rock Morgan; g. g. s. old Sherman Morgan; g. g. g. s. Justin Morgan.

Dam sired by Sherman Morgan; g. g. d. by the original Justin Morgan.

[Signed.] H. CHASE.

HORSES FOR ALL WORK.

Judges,.. { N. W. HARRINGTON, - - *Delavan.*
T. C. DOUSMAN, - - - *Summit.*
H. C. CRANDALL, - - - *Utica.*

From this Committee we have no report, other than the awards:

Lewis Brown, Watertown, best Mare for all work,..... $10
Richard Mervin, Richland, 2d best pair of Mares for all work,..... 10
Jas. H. Rogers, Milwaukee, best Matched Horses for all work, ... 15
D. S. Cady, Milwaukee, best Stallion for all work,..... 20
Chase & Holstein, Wauwatosa, 2d.....do..... 15
Geo. O. Tiffany, Milwaukee, best Mare and Colt,..... 10

HORSES FOR ALL WORK,—(continued.)

Geo. Tiffany, Milwaukee, best Mare Colt, "Bald Charlotte,".....3
Geo. Tiffany, jr., Milwaukee, best Stallion Colt, "Moonshine," 1 year old, 5
O. Ellsworth, Oak Creek, best Gelding, 3 years old,.....10
D. S. Foote, Merton, best Mare Colt, 1 year old,.....5
G. W. McEarly, Merton, best Black Hawk Mare, 3 years old,.....10
G. W. McEarly,...do.....do.....2....do.....7
John Gale, Merton, best 7 Colts, progeny of Black Hawk "Bucephalus,"...20
N. Potter, Sugar Creek, best Stallion, "Romeo," 2 years old,.....7
John Cass, Greenfield, best Gelding Colt, 2 years old,.....7
Jas. Walker, Racine, 2d best Mare Colt, 2 years old,.....5
Jas. Walker,...do.....do...Stallion Colt, 1 year old,.....3
C. N. Vosburg, Greenfield, 2d best Gelding Colt, 3 years old,.....7
Chase & Holstein, Wauwatosa, 2d best Mare with Foal at foot,.....5
E. D. Weld, Greenfield, 2d best Mare Colt, 3 years old,.....5
M. Howland, Mount Pleasant, best pair working Mules,.....10
H. B. Trowbridge, Racine, 2d best.....do.....5
L. A. Mann, Waukesha, best Jack,.....10
D. Blodgett, Beloit, 2d best...do.....5

TROTTING AND ROAD HORSES.

Judges,.. { B. R. Hinkley, - - - *Summit.*
Ezra Bingham, - - - *Koshkonong.*
J. V. Robbins, - - - *Burke.*
Col. Billings, - - - *Highland.*
Martin Field, - - - *Mukwonago.*

The awards of Premiums in this department were as follows:

KEPT FOR STOCK, PAST SEASON.

Wm. L. Utley, Racine, 1st premium, "Green Mountain Boy," time 2.58.. $30
J. W. Calkins, Merton, 2d ...do...."Young Bashaw,.....do..2.59.. 20
J. P. McCracken, Ken., 3d ...do...."Lancet,".....do..3.01.. 10

STALLIONS—FOUR YEARS OLD AND UNDER.

E. M. Danforth, Summit, 1st premium, Black Hawk Stallion, .time 3.04.. $25
W. P. Benson, Ft. Atkinson, 2d premium, "Addison,".....do..3.07.. 15
C. G. Brown, Brookfield,... 3d....do...."Hiawatha,".....do..3.27.. 10

MATCHED HORSES.

Wm. Clark, Summit, 1st premium,.....time 3.11.. $20
E. S. Higgins, agent for Danforth & Gale, Summit, 2d prem....do..3.19.. 15
F. B. True, Fulton,.....3d..do.....do..3.49.. 10

SINGLE ROAD HORSES.

L. Rowell, Merton,.....1st premium,.....time 2.47.. $15
Wm. Clark, Summit,.....2d....do.....do..2.53.. 10
I. L. Durham, Milwaukee, 3d....do.....do..2.58.. 5

Your Committee on Trotting and Road Horses report that, notwithstanding the high degree of merit characterizing many of the horses entered in this class, the character and condition of the track was such that it was impossible that the trials of

speed should either do justice to the exhibitors, or give entire satisfaction to the public who witnessed them.

Test trials are certainly very important, as a means of improving the quality of our horses, and it is therefore very desirable that the track itself should afford inducements to owners of fast horses to bring them out, and prove their qualities before the public. The exhibition of Horses must always be one of the most attractive features of our State and County Fairs, and it is certainly proper that the Society should make every reasonable effort to render such exhibitions as interesting and satisfactory as possible. A larger and firmer track is very desirable.

B. R. HINKLEY, *Ch'n.*

PEDIGREE OF BLACK HAWK STALLION "WISCONSIN."

"Wisconsin" was foaled about the first of June, 1855. He was sired by "Bucephalus," he by the original Black Hawk, owned by David Hill, of Vermont. The dam of "Wisconsin" is a fine, blooded Duroc Mare, of unsurpassed style and most unaccountable endurance.

"Wisconsin" stands about 15 1-2 hands high, and weighs about a 1000 lbs. when in condition, &c.; his color is a rich black, with one white foot behind.

[Signed.] E. M. DANFORTH.

SHEEP.

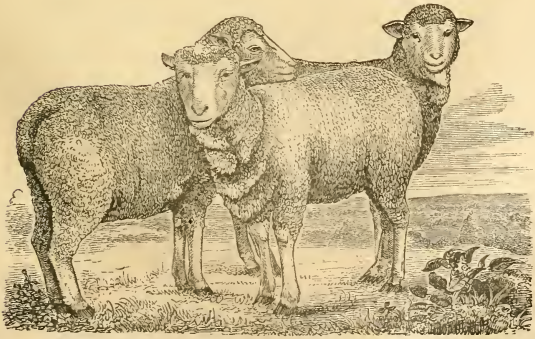
Judges,.. GEO. C. PRATT, - - - - - *Waukesha.*
T. TROW, - - - - - -
A. R. HINKLEY, - - - - *Eagle.*

The Committee on Sheep, of all breeds and grades, after all sorts of trials and tribulations, made the following awards and report:

SPANISH MERINOS AND THEIR GRADES.

A. F. Knox, Whitewater, best Spanish buck, 2 years old,.....	$10
H. Hemmenway, . .do..2d.do.....do .....do....	7
H E. Coon, Palmyra,...3d.do..... .do.....do..... ...	5
A. F. Knox, Whitewater, best .....do.....1 year old,.....	7
H. Hemmenway, Whitewater, 2d best..do.....do.....	5
Gustavus Goodrich, Whitesville, best pen ewes, 2 years old and over,.....	10
H. Hemmenway, Whitewater 2d do....do.....do.....do....do.....	7
F. D. Weld, Greenfield,.....3d do....do.....do.....do....do.....	5

Spanish Merino Buck—owned by A. F. Knox, of Whitewater. First Prize at State Fair of 1859.



Spanish Merino Ewes—owned by A. F. Knox, of Whitewater. First Prize at State Fair of 1859.

SPANISH MERINOES AND THEIR GRADES,—(continued.)

A. F. Knox, Whitewater, best 3 Spanish ewes 1 year old,..... 7
H. Hemmenway,...do..2d..do.....do ....do..... 5
H. Burchard, Milwaukee, 3d..do.....do.....do..... 3
Gustavus Goodrich, Whitesville, best pen ewe lambs,..... 5
H. Hemmenway, Whitewater, 2d..do....do....do. 3
H. E. Coon, Palmyra,.....3d..do. .do....do..... 2
. ..do.....do .....2d..do 3 buck lambs;..... 3

FRENCH MERINOS AND THEIR GRADES.

W. E. Sandford, Waukesha, best French buck, 2 years old and over,.....$10
Luther Landon, Waupun, 2d..do..... do.....do.....do..... 7
H. Burchard, Milwaukee, 3d..do.....do.....do.....do..... 5
W. E. Sandford, Waukesha, best French buck, 1 year old,..... 7
H. Burchard, Milwaukee, 2d..do.....do.....do 5
....do.....do.....2d..do best 3 buck lambs,..... 3
....do.....do.....best 3 French ewes, 3 years old and over,..... 10
Luther Landon, Waupun, 2d do..do.....do....do .....do..... 7
W. E. Sanford, Waukesha, 3d do..do.....do....do.....do..... 5
....do.....do....best 3 French ewes, 1 year old and over,..... 7
H. Burchard, Milwaukee, 2d do..do.....do....do.....do..... 5
H. E. Coon, Palmyra best 3 French ewe lambs,..... 5

SOUTH-DOWNS AND THEIR GRADES.

S. Charlesworth, Omro, best South-down buck, 2 years old,.....$10
A. G. Hanford, Waukesha, 2d best..do....do..... do..... 7
....do.....do.. ..best South-down buck, 1 year old, ... 7
Luther Rawson, Oak Creek, best 3 grade South-down buck lambs,..... 5
John Atkin, Waukesha, 2d best 6..do.....do.....do..... 3
S. Charlesworth, Omro, best 3 South-down ewes, 2 years old,... 10
J. P. Roe, Union Church, 2d best..do.....do.....do..... 7
A. G. Hanford, Waukesha, 3d ..do..do.....do.....do..... 5
J. P. Roe, Union Church, best 3 South-down ewes, 1 year old, ... 7
Luther Rawson, Oak Creek, 2d best grade South-down ewes, 1 year old,... 5
J. P. Roe, Union Church, best South-down ewe lambs 5
J. F. Layton, Milwaukee, 2d best.....do.....do..... 3
Luther Rawson, Oak Creek, 3d best...do.....do. 2

LEICESTERS AND THEIR GRADES.

Evan Jones, Mount Pleasant, best Leicester buck, 2 years old,..... $10
J. F. Layton, Milwaukee, 2d do.....do.....do..... 7
J. F. Layton,....do.....3d do.....do.....do..... 5
Luther Rawson, Oak Creek, best Leicester buck, 1 year old,..... 7
T. K. Carr, Oak Creek, 2d do.....do..... ..do... 5
O. G. Ewing, La Grange, 3d grade,...do ... ...do..... 3
...do.... .....do.....best 3 grade Leicester buck lambs,..... 5
J. F. Layton, Milwaukee, best 3 Leicester ewes, 2 years old,..... 10
Evan Jones, Mt. Pleasant, 2d best 3.....do.....do..... 7
O. G. Ewing, La Grange, 3d best grade..do.....do..... 5
J. F. Layton, Milwaukee, best 3 Leicester ewes 1 year old,..... ... 7
O. G. Ewing, La Grange, 2d best grade Leicester ewes, 1 year old,..... 5
....do.....do.. ..3d.....do.....do.....do..... 3
T. K. Carr, Oak Creek, best 3 Leicester ewe lambs,..... 5
....do..... do.....2d do.....do..... 3

FAT SHEEP.

O. G. Ewing, La Grange, 1st premium on pen fat sheep,..... 5
Luther Rawson, Oak Creek, 2d premium on 3 fat sheep,..... 3

REPORT OF COMMITTEE.

Your Committee regret, that, in making the above awards of premiums, they have been compelled to travel all over the Grounds at least one hundred times, in order to find the animals and properly arrange them. Sheep, hogs, and cattle were found promiscuously mixed together, and no Superintendent of the department was either visible or findable. Your Committee feel satisfied, therefore, that, from the hasty manner in which they were compelled to make an examination of so many kinds of sheep, many errors must, almost necessarily have been committed. We have awarded premiums to nearly every sheep on the Grounds; some of which were very fine animals indeed, and some quite inferior.

But we have no time now to make either special comments or prepare an elaborate general report.

Respectfully submitted,

GEO. C. PRATT, *Ch'n.*

SWINE.

Judges, { JOHN WRIGHTMAN, - - - ——
TYLER CALDWELL, - - *Lynde.*
E. V. TOWNSEND, - - - ——

J. S. Church. Rolling Prairie, 1st premium on Suffolk Boar, 2 years old,.. $10
E. C. Sage, Wauwatosa, 2d do Suffolk Boar, 2 years,..... 7
Joel Hayman, Oak Creek, 1st do Suffolk Boar 1 year old, and under 2,.... 7
Luther Landon, Waupun, 1st do breeding Suffolk Sow and 8 Pigs,..... 10
Simon Ruble, Beloit, 1st do Suffolk Sow, six months old,..... 5
L. B. Potter, Wauwatosa, 2d do (cross Suffolk and Leicester) Breeding Sow and 8 Pigs,..... 7
C. W. Fairbanks, Wauwatosa, 2d do Grade Sow, with Pigs,..... 5
Simon Ruble, Beloit, 1st do Suffolk Boar, 6 months old,..... 5
E. C. Sage, Wauwatosa, 2d do Suffolk Boar Pig, 6 months old,..... 3
E. C. Sage, Wauwatosa, 1st do Suffolk Sow Pig, 10 months old,..... 5
H. E. Coon, Palmyra, 1st do breeding Leicester Sow and 8 Pigs,..... 10
O. P. Dow, Palmyra, discretionary premium on improved Leicester Sow,.. 10
O. P. Dow, Palmyra, discretionary do Essex Boar,..... 7
O. P. Dow, Palmyra, discretionary do improved Essex Sow,..... 5
L. B. Potter, Wauwatosa, do.....do (Leicester and Suffolk) cross Boar, 3 years old,..... 7

POULTRY.

Judges, { W. S. CHASE, - - - - *Janesville.*
L. KENNEDY, - - - *Milwaukee.*
O. F. WILLIS, - - - - *Berlin.*

John Dearsley, Racine,	1st premium on	black Spanish Fowls,		$2
.....do	.....do	.....do	Poland Fowls,	2
....do	.....do	.....do	Aylesbury Ducks,	2
A. G. Hanford, Wauksha,	....do	....	White Dorking Fowls,	2
.....do	.....do	.....do	Black Bantams,	2
A. S. Kennedy, Milwaukee,	..do	.....	Game Fowls,	2
Reuben Strong, Greenfield,	..do	.....	Turkeys,	2
T. K. Carr, Oak Creek,	.....do	.....	Wild and half wild Geese,	2

The Committee on Poultry, in addition to the foregoing awards of premiums, would further

REPORT,

That the display of Poultry was not large; and that the lack of provision of suitable stands for the coops was an occasion of no little dissatisfaction and complaint on the part of the exhibitors. Of course this will be looked to in the preparation of grounds for the next State Fair.

The most conspicuous fowls on exhibition were the Black Spanish variety; there being none of the large Asiatic on the ground.

Charles Blackwell, of Waukesha, exhibited a trio of very fine Black Spanish fowls, and John Dearsley had coops of Silver Pheasants and Leghorn fowls, which were also very good.

There was a box of Peacocks on the Grounds, but the Committee could find no card or evidence of ownership.

All of which is respectfully submitted.

WINFIELD S. CHASE, *Ch'n.*

PRODUCTS OF THE EARTH.

FIELD CROPS BY THE ACRE.

The Executive Committee are enabled to make a report on Field Crops for the year 1859, of which the Society and the State may well be proud. The season in most parts of Wisconsin, proved to be unusually favorable for the wheat crop, which is—and we may add too exclusively—the main reliance of our farmers; and, stimulated, as we presume, by the discreditable Report of the Committee for 1858, a number of enterprising and ambitious gentlemen have produced crops worthy of the best soil and the most thorough cultivation.

The following is a list of the awards of the Committee, made at the meeting in December. Each published report was accompanied by the required affidavits:

N. W. Dean, Madison, 1st premium on one acre Wheat, variety "Blue Stem" Club, No. of bushels 59 1-5,..... $10
Luther Landon, Waupun, 2d do, variety not named, No. bushels, 40 1-4,.. 5
Eli Stilson, Oshkosh, 1st premium on one-fourth acre Carrots, variety, Large Yellow and Long Orange, No. bushels 296..... 10

No other satisfactory reports having come before the Committee, they were denied the pleasure of making any further awards.

WHEAT—STATEMENT OF N. W. DEAN.

The undersigned, a resident of Madison, has raised upon one acre of land, the present year, fifty-nine and 12-60 bushels of the variety known as "Blue Stem" Club Wheat, a sample of which is now on exhibition in the Agricultural Rooms at Madison.

The land upon which the above wheat was raised, was an old Indian field, directly upon the east bank of Lake Monona, in the town of Blooming Grove, in Dane county. The land had been seeded down to blue grass for several years, in commons. It was first broken up in June, 1858, to the depth of about six inches. In the fall of the same year, it was cross-plowed about eight inches deep.

The soil consists of a rich vegetable mould, varying from 10 to 20 inches in depth, with a clay subsoil, and no manure was used.

The expense of cultivation, as near as can be calculated, was as follows:—

Breaking, per acre,	$2 50
Cross plowing, do	1 50
Harrowing, do	50
Sowing, do	20
Seed, 2 bush. do	2 00
Thrashing, do	2 95
	$9 65
Harvesting,	1 50
	$11 15

Respectfully submitted.

[Signed] N. W. Dean.

WHEAT—STATEMENT OF LUTHER LANDON.

The wheat reported by me, in pursuance of the entry made June 1st, 1859, and in compliance with the regulations of the Society, was grown on ground from which a crop of corn had been harvested the previous year. The plowing was thorough, though but once, and eight inches deep. The seed was well washed in brine, limed, and vitrioled, and was sown in the quantity of two bushels to the acre.

The following is a true account of the expenses of cultivation:

Dr. To Plowing,	$1 25	
Seed,	2 25	
Harrowing,	0 50	
Sowing,	0 13	
Harvesting and stacking,	2 25	
		$6 38
Cr. By 40¼ bushels wheat, at 80 cts, per bushel,		$32 20
Profits, not deducting for use of land,		$25 82

I make no account of the threshing, as that is properly offsett by the straw.

[Signed] Luther Landon.

CARROTS.—STATEMENT OF ELI STILSON.

The soil upon which my carrots were raised is a deep, sandy loam; has been thirteen years under the plow, and six years of the last seven in carrots. Been enriched each year with ten to fifteen ordinary loads of well rotted barn-yard manure to the acre.

For this year's crop the land was plowed twice in the early part of May, very deep, and into beds of about one rod in width, then harrowed. The sowing was by hand, and in drills 14 inches apart. Time, 20th of May.

EXPENSES OF CULTIVATION.

Drawing of manure,	$0 75
Plowing and harrowing,	1 00
Seed,	0 75
Planting, 2½ days, at 75 cents,	1 88
Hoeing twice, 5 days' work,	3 75
Harvesting,	4 00
Total,	$12 13

The product of the one-fourth acre being 296 bushels, the cost per bushel is a fraction over four cents.

I may be permitted to add, that this is the same piece of land which yielded the premium crop of 321 bushels in 1857, and a still larger crop, 358 bushels, in 1858.

[Signed] ELI STILSON.

FARM PRODUCTS.

Judges,.. { THOS. HISLOP, - - - *Milwaukee.*
RICHARD ARUNDEL, - - *Dodgeville.*
GEO. CAPRON, - - - *Madison.*

The Committee on Farm Products have attended to their duties, and report the following awards :

Pierce County Agricultural Society, best sample of Winter Wheat,	$3
Samuel Austin, Lake, 2d do	2
Pierce County Agricultural Society, best sample of Spring Wheat,	3
N. W. Dean, Madison, 2d do	2
Pierce County Agricultural Society, best sample of Rye,	2
do do 2d do	1
do do 1st do Oats,	2
do do 2d do do	1
do do 1st do Barley,	2
John Richardson, Butte des Morts, best sample of Hops,	3
G. H. Lamberton, Milwaukee, 2d do	2
A. Loveland, Wauwatosa, pest sample of Beans,	2
Samuel Austin, Lake, 2d do	1
A. F. Richmond, Whitewater, best sample King Phillip Seed Corn,	2
Jacob DeGraff, Brookfield, 2d do	1
R. W. Parker, Wauwatosa, best sample Mercer Potatoes,	2
Pierce County Agricultural Society, best sample Pink-Eye Potatoes,	2
George P. Peffer, Pewaukee, best show of early Potatoes,	2
A. Loveland, Wauwatosa, 2d do	1

FARM PRODUCTS,—(continued.)

Jared Thompson, Milwaukee, best show known and excellent varieties of Potatoes, ... 5
H. E. Coon, Palmyra, 2d best show known and excellent varieties of Potatoes, ... 3
A. Loveland, Wauwatosa, best sample Onions, ... 2
Pierce Co. Agr'l Society, 2d.....do..... 1
T. K. Carr, Oak Creek, best sample Carrots,..... 2
T. C. Howard, Lake, 2d.....do 1
Luther Rawson, Oak Creek, 2d best sample Turnips,..... 1

The Committee would call especial attention to the sample of Peach-blow Potatoes, exhibited by Mr. George Shoecraft, of Michigan. This Potatoe takes the first rank in the N. Y. market, and is undoubtedly one of the best varieties cultivated.

RICHARD ARUNDEL, *Ch'n.*

GARDEN VEGETABLES.

Judges,.. { JARED THOMPSON, - - - *Greenfield.*
T. M. RIDDLE, - - - *Wauwatosa.*
W. S. CHASE, - - - *Janesville.*

The Committee on Garden Vegetables, having discharged the duties assigned them, ask leave to report the following list of awards:

Enoch Chase, Lake, best 12 heads Celery,..... $2
J. S. Wilcox, Milwaukee, best 4 Squashes,..... 1
Enoch Chase, Lake, 2d ...do.....do..... .....50c
H. J. Starin, Whitewater, best sample Lima Beans,..... 1
A. Loveland, Wauwatosa, best 12 Parsnips,..... 1
....do.....do.....do...6 Cabbages,..... 1
J. S. Wilcox, Milwaukee, 2d do.....do.....50c
H. Putman, Big Bend, best 3 varieties Tomatoes,..... 1
R. W. Parker, Wauwatosa, 2d best.....do..... .....50c
Luther Landon, Waupun, best 12 Beets,..... 1
Henry Kroger, Milwaukee, 2d best.do.....50c
H. J. Starin, Whitewater, best 12 Sweet Potatoes,..... 3
Henry Kroger, Milwaukee, best Winter Radish,..... 1

The Committee found on exhibition 12 Tomatoes of very fine quality, exhibited by Mrs. J. L. Burnham, of Milwaukee, which, had they been entered, would have taken the first premium.

Respectfully,

JARED THOMPSON, *Ch'n.*

SWEET POTATOES.

There were but few samples of this superior esculent on exhibition; enough, however, to convince the unbelievers that, though hardly equal to that of North Carolina, the climate of Wisconsin is not so unfriendly to the sweet potatoe as they had been accustomed to think.

The best bushel was exhibited, as usual, by A. Bovee, of Eagle, to whom the Ten Brook premium of one barrel of seed potatoes, valued at $10, was accordingly awarded.

SUGAR CANE AND SORGHUM SYRUP.

The Report of the Committee on Sugar and Syrup Manufacture, &c., will be found under the head of Operative Machinery, where it more properly belongs. It is proper to state in this connection, however, that very superior samples of Sorghum Canes, of the Imphee variety, were exhibited by J. C. Plumb, of Madison. No premium was offered.

The Committee found but one sample of Syrup made from the Sorghum—a quantity of two gallons, entered by J. C. Brayton, of Aztalan. It was manufactured from last year's cane, and though not so good as the Committee had seen, was deemed worthy of the premium of $8, offered by the Society.

FRUITS.

PROFESSIONAL LIST.

Judges,..	DR. MACVICKAR,	*Milwaukee.*
	G. DE NEVEU,	*Fond du Lac.*
	L. P. CHANDLER,	*Burke.*

AMATEUR LIST.

Judges,..	O. P. DOW,	*Palmyra.*
	L. P. CHANDLER,	*Burke.*
	SIMEON MILLS,	*Madison.*

In making their examinations and awards, the two committees above named, united, and hence make but one report.

PROFESSIONAL EXHIBITORS.

A. G. Hanford, Waukesha, best and greatest variety Apples of Wisconsin growth,..... $7
C. M. Plumb, Lake Mills, 2d best and greatest variety Apples of Wisconsin growth,..... 5
Geo. P. Peffer, Pewaukee, 3d best and greatest variety Apples of Wisconsin growth,... 3
A. Bonham, Oporto, Mich., best 10 varieties Apples,..... 3
Thos. Howland, Pleasant Prairie, best show Winter Apples,..... 7
Geo. P. Peffer, Pewaukee, best and largest variety of Pears,..... 7
R. W. Parker, Wauwatosa, best 2 variety Pears,..... 5
Colby & Willey, Janesville, 2d best 2 varieties Pears,..... 3
G. P. Peffer, Pewaukee, best and greatest variety Plums,..... 3
C. Cary, Oak Creek, best show Seedling Peaches,..... 5
Colby & Willey, Janesville, best show of Grapes,..... 3

AMATEUR EXHIBITORS.

D. Matthews, Burlington, best and greatest variety of Apples,..... 7
H. Catlin, Wauwatosa, 2d do.....do.....do.... 5
Luther Landon, Waupun, 3d do.....do .....do..... 3
T. C. Dousman, Waterville, best 10 variety of Apples,..... 3
A. Putman, Big Bend, 2d best 10.....do..... 2
Mrs. S. C. Russ, best show Winter Apples,..... 7
Ed. Truslow, Milwaukee, 2d do....do..... 5
J. A. Carpenter, South Pass, Ill., best show Autumn Apples,..... 7
Thos. Howland, Pleasant Prairie, best and largest variety Pears,..... 7
H. Beckwith, Oak Creek, 2d best.....do.....do..... 5
J. L. Pierce, Milwaukee, 3d best.. .....do.....do..... 3
H. W. Hayes, Palmyra, best and greatest variety Plums,..... 3
O. F. Willis, Berlin, best and greatest variety Grapes,..... 3
John Bonnel, Milwaukee, 2d best.....do..... 2
O. Catlin, Wauwatosa, prem. on new variety of Apples, disc.,..... 2

MELONS.

O. P. Dow, Palmyra, best Black Spanish Watermelons,.....$2
....do .....do.....do..Mountain Sprout...do..... 2
....do.....da.....do..show .....do..... 2
....do.....do.. ...do..Citrons for preserves,..... 2
Chas. Gifford, Milwaukee, best show Muskmelons,..... 2
J. S. Wilcox, Milwaukee, specimen Pie Melon, dis.,..... 2

REPORT OF COMMITTEE.

In spite of Jack Frost and of intense drought, our fruit-growers do not get discouraged. The exhibition of Fruit this year proves this. Frost every month during the past summer, had prepared us to find empty tables in the tent devoted to the pomological exhibition. We were, however, pleasantly disappointed at finding them *well covered* with pretty fair fruit.

The fruit-growers of Wisconsin are made of good material. When hundreds of trees are destroyed, they very good naturedly replace them with as many thousands. Artificial protection is

brought to bear in the contest with the elements, and in spite of all the difficulties and embarassments, fruit-raising is certainly on the advance in our State. Verily, "perseverance conquereth all things."

The Committee call special attention to the Seedling Apple raised by O. Catlin, Esq , of Wauwatosa ; which had a very showy and fine appearance, and upon tasting was found to be of very superior quality and flavor, fully rivalling, or even surpassing the "Porter." Indeed, it has few superiors in the whole catalogue of Apples. The Committee have no hesitation in recommending it for general cultivation in this State.

For particulars see the report of Messrs. MacVickar and Chandler, who more carefully examined, and have very correctly described it.

Col. Crocker, of Milwaukee, had upon the tables most beautiful Pears of several varieties, which certainly equalled, if they did not surpass, any on exhibition. The Col. also exhibited some fine Melons, and the largest and most beautiful Plums, of the Jefferson and Coe's Golden Drop varieties, that it was ever our good fortune to look upon. The Society and the public are really under special obligations to this skillful amateur fruit-grower and public spirited gentleman, for the beautiful specimens of various fruits with which he gratuitously graces our Annual Exhibitions.

Respectfully submitted,

GUSTAVUS DE NEVEU, *Ch'n Joint Com.*

REPORT ON THE "WAUWATOSA" SEEDLING.

Fruit—large, roundish, slightly oblate ; good specimens three inches high by three and half broad.

Skin—very smooth, pale yellow, becoming ——— when ripe with a brownish red blush when exposed to the sun, and sprinkled with numerous small green dots underneath.

Stalk—inserted in a deep and wide cavity, ribbed around.

Calyx—persistent, large and closed, in a deep and wide basin somewhat ribbed and plaited.

Flesh—white and tender, and with a rich and lively flavor.

Season—early autumn, keeping till ——

Quality—very good.

On a careful examination of this apple, the Committee on Fruits thought it well worthy of notice and trial, and named it the "*Wauwatosa*," in order to indicate its native origin. It was raised from seed, by Mr. Catlin, and has been in bearing for the last five years, and he has found it hardy and productive. It is a fruit of large size and handsome appearance, and compared favorably with the fine specimens of the numerous old varieties, by which it was surrounded. The Committee, on tasting it, decided that its eating qualities were equal to its good looks. By some, it was thought similar in taste to the Porter apple, but on actual comparison, was found superior to that variety, in richness and sprightliness of flavor. It appears to be of the character of the fine old Fall Pippin, and, as a native seedling, the Committee hope that it may prove more hardy, and better suited to withstand the severe and sudden extremes of our western climate, that impairs the value of so many of the fine old varieties, which we have prized from our boyhood, in the East, but which we try in vain to make productive in Wisconsin.

BENJ. McVICKAR,
LUTHER P. CHANDLER.

WISCONSIN WINES.

Judges, { J. A. Sleeper, - - - *Janesville*,
O. A. Babcock, - - - *East Troy*,
Col. Hans Crocker, - - *Milwaukee*.

The committee on Wisconsin Wines report that they have examined the specimens exhibited, and regret to say that the show of wines is very small, and the competitors few. We award the premiums as follows :

To Charles Hanford, of Emerald Grove, Rock county, for best sample of Grape Wine, the first premium, $5. This sample is a very fine wine, made from the Isabella grape in 1855.

To the same the second premium for a sample of Catawba Wine, manufactured in 1857, $2.

To John T. Perkins, of Milwaukee, the first premium for sample of Currant Wine, $3.

To H. J. Starin, of Whitewater, the second premium for sample of Currant Wine, $2.

There was but one specimen of Rhubarb Wine presented us. We were not favorably impressed with the article, and beg leave to say that if the specimen was any index of the quality of Wine to be procured from that plant, its manufacture had better be discouraged, and the plant used for pies rather than Wine. We award no premium.

Mr. Hanford presented some Strawberry Wine, made in 1857, of a very fine flavor.

B. F. Mills, of Baraboo, had on exhibition a specimen of White Currant Wine, differing in flavor from the Red Currant, and though not of as good quality as the Red Currant, was, nevertheless, a fair article.

We are of opinion that no discretionary premiums should be awarded to any one in this class.

J. A. SLEEPER, *Ch'n.*

FLOWERS.

PROFESSIONAL LIST.

Judges,.. { JOHN BUDD, - - - - - *Madison*,
MRS. B. R. HINKLEY, - - *Summit*,
J. C. PLUMB, - - - - *Lake Mills*

The Committee on Flowers (Professional List) regret that the display in this department was not more worthy of the occasion. Such Flowers as had the good fortune to be put upon

exhibition were fair in quality, and gave evidence of taste and skill in their culture. The following is the list of awards :

Chas. Gifford, Milwaukee, best and greatest variety of Dahlias,.. .....$3
....do.....do.....do.....do.....Verbenas,.... ... 2
....do.....do.....best pair round Boquets,..... 1
Samuel Brooks, Chicago, best Seedling Dahlias,..... . 2
Herbert Reed, Milwaukee, best 2 doz. Geraniums,..... 2
... do.....do.....do.....Seedling Verbenas,..... 1
....do..... .....do.....do.....variety Petunias,..... 1
Thos. Hislop,.....do.....do.....variety Pansies,..... 1
....do.....do.....do.....12 varieties Gladiolus,..... 1
....do.....do.....do.... ...12 named Dahlias..... 2
Mrs. J. B. Cobb, Waukegan, Ills., best collection Cut Flowers of budding and green house plants,..... 3
Colby & Willey, Janesville, best and largest collection of Fall Flowers, ... 5

Mrs. J. B. Cobb's fine display of Dahlias, Verbenas, and other budding and green-house Flowers, was worthy of special notice, and your Committee commend them to the favor of the Executive Board.

JOHN BUDD, *Ch'n.*

AMATEUR LIST.

Judges,.. { J. G. KNAPP, - - - - *Madison.*
MRS. T. C. DOUSMAN, - *Summit.*
H. C. SNOW AND LADY, - - ————

The Committee regret to be obliged to inform the Society, that the entries in this class are without competition in every instance. At the same time, we rejoice to say that all entries, considering the season we have passed through, are well worthy of note.

We have awarded the Premiums as follows :

Mrs. H. J. Starin, Whitewater, best basket of Flowers,..... $2
Peter Canon, Milwaukee, best pyramid Boquet, ... 5
.....do... .....do.....do. flat.....do 3
.....do.....do.....do. hand.....do 2
.....do .....do.....do. pansies....do 2
Charles James, best 5 named Roses,..... 3

The Committee also find on their list of entries a volume of an Herbarium of Plants, by I. A. Lapham, of Milwaukee. The study and labor requisite cannot but meet with our commendation.

The same remarks are applicable to the entry, by J. A. Burgess, of an Ivory Plant.

J. G. KNAPP, *Ch'n.*

DAIRY AND HOUSEHOLD PRODUCTS.

BUTTER—CHEESE—BREAD—CAKE, ETC.

Judges,..
- ELI STILSON, - - - - *Oshkosh.*
- JOHN LEWIS, - - - - *Milwaukee.*
- MRS. J. DAVIS, - - - *Waukesha.*
- MRS. E. L. MELINDA, - *Waukesha.*
- W. LESTER, - - - - *Janesville.*

The following are the awards of this Committee:

F. D. Weld, Greenfield, best 25 lbs. June Butter, Book and Set of Spoons. $10
Mrs. E. W. Edgerton, Waterville, 2d best 25 lbs. June Butter,..... 7
Reuben Strong, Greenfield,..... 3d..do.....do..... 5
Mrs. E. W. Edgerton, ...best 25 lbs. Butter made at any time, ... 7
Griffith Jones, Emmet,.....2d..... ...do.....do..... ... 5
H. B. Trowbridge, Burlington, 3d.....do.....do..... 3
A. Atwood, Waupun,..... ...best 3 Cheeses made in the State, ... 10
Henry Bush, Fond du Lac, ...2d....do.....do..... 7
H. B. Trowbridge, Burlington, .3d....do.....do 5
P F. Boss, North Prairie, ...best single Cheese,..... 3
H. B. Trowbridge, Burlington, 2d.....do..... 2
E. G. Needham, Wauwatosa, best box Honey,..... 2
Wm. Brigham, Milwaukee, best barrel Winter Wheat Flour,..... 5
.....do.....do.....do.... Spring.....do 5
.....do.....do.....do....Self-rising Flour, ... 5
Mrs. James Heth, best loaf Bread, milk rising,..... 2
Herbert Reed, Milwaukee, best loaf Bread, self-rising,..... 2
.....do.....do.... best loaf plain Cake..... 2
E. P. Burdick, Milwaukee, best loaf White Bread, by juvenile,..... 2
Miss L. J. Peffer, Pewaukee, best plain cake, by juvenile,..... 2
Anderson & Co., Milwaukee, best Fruit Cake,..... 2
Mrs. A. Peffer, Pewaukee, best Sponge Cake, ... 2

Your Committee would speak very highly of the Bridal Temple Cake, entered by Anderson & Co., of Milwaukee. It was really a splendid thing—excelling any ornamental work of the kind ever before exhibited in our State.

One barrel of Spring Wheat Flour, entered by L. and T. Bussey, of Busseyville, would have been entitled to the second premium on Spring Wheat Flour had it been found properly entered on the books.

We would also call the attention of all who are interested in a safe and reliable "staff of life," to the fine specimens of self-rising Bread and Biscuit, entered by Herbert Reed, of Milwau-

kee—made by himself the "first time trying." According to our taste, they were excellent, and presented a favorable contrast to the Saleratus Biscuit, which some waggish truth-teller had appropriately labelled "Poison!" [See Recipes.]

Respectfully submitted.

ELI STILSON, *Ch'n.*

Below we publish such statements concerning the mode of producing the premium articles in this department, as have been furnished us by the successful parties:

HOW THE BEST THREE CHEESES WERE MADE.

My three cheeses were made in the month of June; number of cows 30; number of milkings 2; no addition of cream; quantity of rennet, one half pint. Mode of preparing rennet: Put one rennet into four quarts of milk-warm water; let it soak three or four days; then add as much salt as the water will dissolve. Press twenty-four hours in common lever press; use fine barrel salt; one common tea cup full to twenty lbs of curd.—After the curd has been pressed twelve hours, turn it and put on the bandage; turn, grease with fresh butter, and rub thoroughly every day, and store in a dry, well ventilated room.

WAUPUN, Sept., 1859.

A. ATWOOD.

HOW THE SECOND BEST THREE CHEESES WERE MADE.

Made on the 20th, 21st and 22d days of June; number of cows, 25; two milkings for each cheese. Process of making as follows: The night's milk is strained in a large tin vat, setting in a wooden one, and water carried in lead pipe into the wood one in hot weather, to cool the milk. The morning milk is strained into the night's milk, and heated to sixty-five degrees. Then a sufficient quantity of rennet is put in to bring the curd in forty minutes. The breaking up of the curd and scalding occupies about two hours; the greatest heat in scalding, one hundred and twenty degrees; then cool the curd by turning cool water into the vat, and around the tin vat, which sets within the wooden one. The curd is then put in the press, and pressed twenty-four hours, by a lever. The cheese is taken from the press and turned after pressing twelve hours, and then put in the press again, and more weight added—covered in a dry place, and turned and rubbed every day.

FOND DU LAC, Sept. 1859.

HENRY BUSH.

MRS. JAMES HETH'S RECEIPE FOR BEST MILK-RISING BREAD.

Ingredients—1 quart water, 1 tea cup new milk, 1 tea-spoon salt, 1 do sugar. Keep at a temperature of 98° Fahr., until light; add equal quantities of milk and water; knead thoroughly, and place directly in pans.

HERBERT REED'S RECEIPE FOR THE SELF-RISING BREAD.

To prepare the flour, take 10 lbs. of flour, and 5 ounces of Reed's baking powder, mix well together, sift thoroughly; take one and a half lbs of flour to a loaf, mix with sufficient milk or water, stir well with a spoon, mould with as little use of the hands as possible, and put into the oven immediately; bake three quarters of an hour.

HERBERT REED'S RECEIPE FOR THE SELF-RISING BISCUIT.

Take 1 lb. of Reed's self-rising flour, dried in an open oven; 1 lb. of finely powdered sugar; five ounces of butter, and the whites of ten eggs. Beat the sugar and butter to a cream, add the whites cut to a stiff froth, stir the whole thoroughly into the flour; put into two buttered earthen dishes; bake in a hot oven, three-quarters of an hour. Mix as quickly as possible, and put into oven immediately. If less butter and eggs are used, the cake will be much lighter, but will need a little sweet milk, added in mixing.

MISS L. J. PEFFER'S RECEIPE FOR BEST PLAIN CAKE.

Take one and a half cups sugar, one cup butter, one cup of buttermilk, and one tea-spoonful saleratus, add enough flour to make a stiff batter.

MRS. A. PEFFER'S RECEIPE FOR BEST SPONGE CAKE.

Take 3-4 lb. flour, 12 eggs, and half a nutmeg. Beat together the yolks of the eggs to a cream, and the whites to a stiff froth. Add the flour to the yolks and sugar, stirring as lightly as possible, until well mixed; then add the whites, stirring in same manner. Bake in an oven of moderate temperature.

DELICACIES.

Judges,.. { MRS. C. S. KNEELAND, - - *Waupun*,
MRS. N. W. DEAN, - - - *Madison*,
MRS. H. W. WILLIAMS, - - ———
MRS. H. J. STARIN, - - - *Whitewater*.

Although there was no competition in this department, the committee have decided that the preserves and jellies entered by Mrs. H. W. Hayes were of superior quality and fully worthy of the premiums offered by the Society. They have accordingly made the following awards:

Mrs. H. W. Hayes. Palmyra, 1st prem., 14 varieties of preserves, $1 each,..14
Mrs. H. W. Hayes, Palmyra, 1st prem. 13 varieties of jellies,.....13

By request of the committee, respectfully submitted.

MRS. H. J. STARIN.

MRS. HAYES' DIRECTIONS FOR PRESERVING FRUITS, MAKING JELLIES, ETC.

To Preserve Apples.—Pare and core, and cut them in halves or quarters, (whole if preferred;) take as many pounds of the best white sugar; put a teacup of water to each pound; when it is desolved set it over the fire, and when boiling hot put in the fruit, and let it boil gently until it is clear and the syrup thick; take the fruit with a skimmer on to flat dishes, spread it to cool, then put it in pots or jars, and pour the jelly over. Lemons boiled tender in water and sliced thin may be boiled with the water.

Crab-Apple.—The same as apple.

Pear.—Take the pears and set them over the fire in a kettle with water to cover them; let them simmer until they will yield to the pressure of the finger; then, with a skimmer, take them into cold water; pare them; then make a syrup of a pound of sugar for each pound of fruit; when it is boiling hot pour it over the pears and let it stand until the next day; then drain it off, make it boiling hot and again pour it over; after a day or two put the fruit in the syrup, over the fire, and boil it gently until it is clear; then take it into the jars; boil the syrup thick and pour it over the fruit.

Strawberry.—To two pounds of strawberries add two pounds of powdered sugar, and put them into a preserving kettle over a slow fire until the sugar is melted; then boil them about twenty minutes, and put the fruit into jars boiling hot.

Currant.—Take ripe currants, free from stems; weigh them, and take the same weight of sugar, with sufficient water to dissolve the sugar; make a syrup and boil until clear; then turn it over the fruit; let it remain one night; then set it over the fire and boil gently until they are cooked and clear; then with a skimmer, put the fruit in the jars; boil the syrup until rich and thick, then pour over the fruit in the jars.

Peach.—Pear the peaches, weigh them, and take the same weight of sugar; boil the syrup until it is clear, then turn it over the fruit; let it remain one night, when take out the fruit upon flat dishes; boil the syrup again and pour it over the fruit *in the jars;* again pour off the syrup and boil it—this to be repeated for four successive days—the jars not to be closed until the whole is thoroughly cold.

Jellies.—The directions are nearly similar for all kinds of fruit. Express the juice from the fruit, weigh it, and add the same weight of sugar; boil to the consistency of jelly, (the *time* varies for the different kinds of fruit;) then put it in glasses, let it remain until perfectly cold, when seal up.

Plum.—Directions the same, except that the fruit should be cooked up with the sugar; then skim out the fruit; strain and boil the remainder until it is a jelly.

Apple.—Stew up the fruit, then strain the juice, add the same weight of sugar and boil until jelly; flavor with slices of fresh lemon.

Raspberry Jam.—Weigh the fruit and add three-quarters of the weight of sugar; put the fruit into a preserving pan, boil and break it; stir constantly and let it simmer half an hour.

Respectfully submitted,

MRS. H. W. HAYES.

PALMYRA, Wis., September, 1859.

SUGAR AND SYRUP MANUFACTURE.

Judges,.. J. G. KNAPP, - - - - *Madison,*
F. C. CURTIS, AND WIFE, - - *Rocky Run,*
T. C. DOUSMAN AND WIFE, - - *Waterville.*

Spears & Plumb, Madison, 1st premium for Manufacturing Apparatus complete upon the fair grounds, for Sugar and Syrup making,.....$100 00
L. L. Lee & Son, 2d premium.....do.....do..... ..do..... 50 00

The Committee upon the Manufacture of "Sugar and Syrup upon the Fair Grounds," found upon their book two entries for competition, for the "best Manufacturing Apparatus, complete, upon the Fair Grounds, for Sugar and Syrup making, comprising Grinding and Boiling Fixtures"—the one by Messrs.

Spears & Plumb, of Madison, and the other by L. L. Lee & Son, of Milwaukee.

Owing to the imperfect fitting up of the apparatus, the parties were not prepared to work before the Committee until the afternoon of Thursday. At that time we weighed out to each of the parties 77 1-2 pounds of Imphee canes for grinding.

The mills were operated by one horse each.

Messrs. Spears & Plumb ground out their quantity in 28 1-2 revolutions of the horse; and Lee in 30 1-2 revolutions. The time of each was the same, 6 1-4 minutes.

Spears & Plumb extracted 38 1-4 pounds of juice, and Mr. Lee 46 3-4 pounds. The first lost considerable by fast feeding and an overflow of the juice from the channel of the mill.

The whole of the juice was delivered to Spears & Plumb for evaporation, upon "Cook's Portable Sugar Evaporator."—They had at least three gallons of boiling water upon the Evaporator when the juice was put upon it. In fifty-five minutes began to draw finished Syrup from the Evaporator, and in sixty-four minutes the whole of the juice delivered, and fifty pounds in addition was reduced to a Golden Syrup, and the Evaporator left full of water, which had been introduced to drive the Syrup from the Evaporator. There was no burnt matter on the Evaporator.

COOK'S EVAPORATOR.

On Friday morning the Committee weighed to the competitors 79 pounds of very unripe Sorghum canes. Messrs. Spears & Plumb ground out their quantity in 45 1-2 revolutions of the horse, occupying 10 1-2 minutes time; and Lee & Son in 30 revolutions of the horse, occupying 7 1-2 minutes time.

The draft of Messrs. Spears & Plumb's Mill was, both trials, to the draft of Mr. Lee's as 2 is to 3, at least.

Messrs. Spears & Plumb extracted 41 1-2 pounds of juice, and Mr. Lee 48 pounds. The first labored under the same difficulty as on yesterday, of the expressed juice overflowing from the channel of the Mill and wasting.

Mr. Lee extracted 48 pounds of juice.

The juice was delivered to Mr. Lee for evaporation upon Hedge's Evaporating Pans, and raised to a boiling point upon a pan over the fire, and immediately burnt and spoiled, when the operators abandoned it.

From the same kind of canes, about a hundred pounds of juice was extracted, partly by Messrs Lee, and partly by Mesrs. Spears & Plumb, and boiled upon their (Cook's) Evaporator, and a very fine article of Syrup made from it. There was no burning in the pan, nor unpleasant flavor to the Syrup, though it was darker than the Syrup made on Thursday, by the same parties. The Committee are unanimous in the opinion, that Cook's Evaporator is the best article which has ever been presented to the farmer for the evaporation of sugar.

The Committee have awarded the First Premium to Messrs. Spears & Plumb for the best complete apparatus.

The Committee are well aware that good work has been done with Hedge's Boiling Pans, though this time the persons operating it have failed; but by reason of the efficiency of their Mill, we have concluded to award to them the Society's Second Premium.

All of which is respectfully submitted, &c.,

J. G. KNAPP, *Ch'n.*

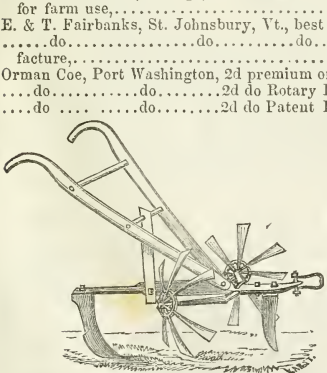
MACHINERY, MANUFACTURES, AND WORKS OF ART.

FARMING IMPLEMENTS.

Judges,.. { WM. F. PORTER, - - - - - *Madison.*
O. G. EWING, - - - - - *La Grange.*
JAS. DAVIS, - - - - - - *Waukesha.*

The Committee on Farm Implements have performed their duty as best they could, and awarded the following premiums:

John Esch, Milwaukee, 1st premium on Light Farm Wagon,.....Dip. or $5
Hansel & Co., Milwaukee, 2d do.....do..... 3
J. H. Learned, Oak Creek, 1st do Land Roller,..... 5
....do.....do.....do....Land Harrow,..... 3
Iverson & Reeves, Thompsonville, 1s do Steel Plow for stiff soil,.....Cert.
J. C. Mitchell, Milwaukee, best and most numerous collection of Agricultural Implements,.....Dip.
F. C. Curtis, Rocky Run, 1st premium on doz. Brooms,..... 2
Pierce County Agricultural Society, 1st do Steel Crossing Plow,.....Cert.
A. K. Cutts, Janesville, 1st do Fanning-Mill,.....Dip.
Manny, Blinn & Co., Rockford, Ill., 2d do Fanning-Mill,..... 3
Henry Mitchell, Racine, 1st do Stubble Plow for light soil,.....Cert.
R. W. Gates & Co., Chicago, best Portable Hay and Cattle Weighing Scales for farm use,.....Dip. and 5
E. & T. Fairbanks, St. Johnsbury, Vt., best Platform Scales,..... 5
.....do.....do.....do..show of Scales of one manufacture,.....Dip. and 5
Orman Coe, Port Washington, 2d premium on Rotary Cultivator,..... 2
....do.....do.....2d do Rotary Potato Digger,..... 1
....do .....do.....2d do Patent Harrow,..... 2



COE'S ROTARY CULTIVATOR.

The exhibition in this important department was not so full as it should have been. Of *plows*, particularly—that most important of all farm implements—the show was more meagre than ought to have characterized a County Fair.

Respectfully submitted,

WM. F. PORTER, *Ch'n.*

OPERATIVE MACHINERY.

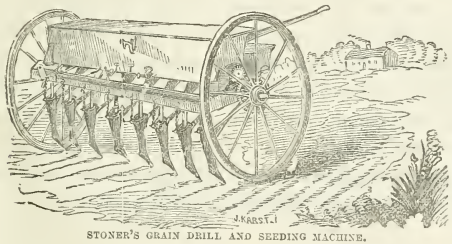
Judges,.. { IRA MILTIMORE, - - - - *Janesville.*
JAMES SEVILLE, - - - *Milwaukee.*
C. W. OLNEY, - - - - *Madison.*

This Committee perseveringly devoted themselves to the arduous duties imposed upon them, and submitted the following list of awards :

Peter Heuston, Cambria, 1st premium on Roberts' new Harvester,....Dip.
A. P. Dickey, Racine, 2d do Threshing Machine and Separator,..... $3
A. P. Dickey, Racine, 1st do Horse Power and Equalizer,.....Dip. and 5
D. M. Misner, Milwaukee, 1s do Thresher and Separator, Pitts' Patent,... 5
J. I. Case, Racine, discretionary premium on Separator and Thresher, Dip.
Wm. B. Walton & Son, Milwaukee, 1st do Finished Brass Work,..... 5
.....do.... do.....do....do.....Unfinished Brass Castings,..Dip.
.....do.....do.....do....do.....Sad Irons and Stand,..... 2
.....do. ...do.....do.....best Saw Mandrels,.....Dip.
E. W. Skinner, Madison, 1st premium on best Self-Raking Reaper and Mower combined, Palmer & Williams' Patent,.....Dip. and 10
L. J. Bush, Toledo, Kirby's American Harvester and Mower, disc.....Dip.
....do.....do....Little Buffalo Mower, discretionary..... Dip.
....do.....do....Kirby's American Reaper and Mower combined, discretionary.....Dip.
T. Falvey, Racine, discretionary premium on Reaper and Mower combined,..... .....Dip. and 5
S. L. Sheldon, Madison, discretionary premium on Seymour & Morgan's Combined N. Y. Self-Raking Reaper and Mower,.....Dip. and 5
W. J. Jennings, Franklin, discretionary premium on Allen's Mower,..Dip.
I. M. Singer & Co., Milwaukee, 1st premium on Leather Sewing Machine,.....Dip.
I. E. Lockwood, Racine, 1st do Family Sewing Machine,.....Dip.
Mrs. John Harvey, Chicago, 2d do Howe's Sewing Machine,..... 3
N. A. Davis, Concord, N. H., 1st do Stump Machine,..... .....Dip.
Geo. S West, Milwaukee, 1st do Clover Huller,..... .....Dip.
G. K. Fox, Milwaukee, 1st do Goff's Hand Patent Knitting Machine, Dip. and 5
L. L. Lee & Son, Milwaukee, 1st do Horse Power,.....Dip.
J. I. Case, Racine, 2d do Horse Power..... 5
Blanchard & Arnold, Milwaukee, 1st do Iron Castings in Green Sand,.... 5
Philip Gutman, Milwaukee, 1st do Corn and Cob Mill, "Big Indian," Dip and..... 10
Lester Day, Buffalo, N. Y., 1st do Corn Planter,.....Dip.
C. W. Fairbanks, Wauwatosa, 2d do Dairy Churn,..... 2
O. G. Lange, Kenosha, 1st premium Leonard's Patent Seamless Thimble Skanes,.....Dip.
Wm. H. Doane, Chicago, 1st do Siding and Re-Sawing Machine,..Dip. and 10
.....do.....do..... ...Sash and Mortising Machine,.....Dip. and 5
.....do.....do.....Mortising Machine,..... 3
G. Grimshaw, Milwaukee, 1st do Double Action Force Pump,..... 5
P. Schley, Milwaukee, 1st do case of Files,..... .....Dip.
R. M. Annis, Milwaukee, 2d do Lifting and Force Pump,..... 3
Wm. E. Cramer, Milwaukee, 1st do Diamond Cord Press,..... .Dip.
J. C. Gray, Janesville, 1st do Portable Cider Mill, "Key Stone,".....Dip.
P. H. Brady, Whitewater, 2d do Scarlet's Eagle Corn Mill,..... 5
M. H. Mott, Brodhead, 1st do Patent Chain Pump,.....Dip.
C. Richards, Chicago, 1st do Arnold Corn Sheller, Grinder and Cracker, Dip.
R. M. Abbey, Thompsonville, Conn., 1st do Patent Pig Feeder,.....Dip.

OPERATIVE MACHINERY,—(continued.)

Mrs. D. L. Raynor, Janesville, 1st do Sloat's Elliptic Stich Lock Sewing Machine,..... Dip. and 5
J. M. Stowell & Co., Milwaukee, 1st premium Portable Circular Saw Mill,.....Dip. and 25
R. S. Rickey, Canton, best Broad Cast Seed Sower, "Young America," Dip.
John Jones, Milwaukee, 3d do on Straw Cutter,..... 3
E. W. Skinner, Madison, 1st premium Climax Hay, Straw and Corn Stalk Cutter,.....Dip. and 5
E. W. Skinner, Madison, 2d do Cummings' Hay, Straw and Corn Stalk Cutter,..... 3
W. D. Bacon, Waukesha, 1st do Tread Power,.....Dip.
.....do.....do.....do...Separator and Winnower,.....Dip. and 5
Blake & Elliott, Racine, 1st do Corn Sheller, Lifter and Separator, "Badger State,"..... 3
James Pratt, Milwaukee, 1st do Lightning Rods,.....Dip.
M. J. Althouse, Waupun, 1st do Wood Pump for farm use,.....Dip.
Walter A. Wood, premium on Mowing Machine,..... 5
B. W. Felthaus, Milwaukee, 1st do sample Brass and Steel Work,.....Dip.
Turton & Sercomb, Milwaukee, do Patent Contra Vent Water Wheel,.Dip.
G. G. Norton, Freeport, Ill., Illingsworth Patent Washing Machine,...Dip.
C. Eggleston, Beloit, premium on Broad Cast Seed Sower,.....Dip.
L. Teed, Port Washington, premium on model of Brick Machine,.....Dip.
C. H. Hildreth, premium on Broad Cast Seeding Machine,..... 3
Fowler & Bacon, Milwaukee, premium on Seed Sower and Harrow combined,..... Dip.
A. Stoner, Milwaukee, premium Grain Drill and Seeding Machine combined,.....Dip.



STONER'S GRAIN DRILL AND SEEDING MACHINE.

Not only because the department of Operative Machinery is one of the most interesting and important of the entire exhibition, but also because there were several particularly interesting machines shown at this Fair, we were desirous of having an elaborate report—such an one as would enable those who were not favored with an opportunity of witnessing the trials, to form some correct conclusion as to their practical value.

The following is the

REPORT OF THE SPECIAL COMMITTEE ON FIELD'S ROTARY PLOW.

The Special Committee appointed to witness the operation of B. F. Field's Rotary Plow, submit the following :

The Machine was tried upon the premises of James H. Rogers, Esq., opposite the Fair Grounds. It was drawn by four yokes of oxen and plowed or rather spaded a furrow five feet wide, and about eight inches deep. The ground was in a very unfavorable condition for this, or for the plow in common use, to do good work, being a heavy clay soil and very wet from the late rains ; but notwithstanding this, the Plow thoroughly dug up and pulverized the ground, leaving it mellow like a seed bed.

The only doubt we have in regard to its practicability is the amount of power required to draw it; the condition of the soil doubtless made the difference of one yoke of oxen.

Mr. Field informs us that his Machine was built in great haste for the purpose of exhibition at the National Fair at Chicago, his patent having been granted only about sixty days since, and was very imperfectly made, the journals being unprotected from the dirt which caused great friction, and, of course, more power of propulsion. The Inventor says this difficulty can be easily obviated, and will be, in the construction of future machines.

We unhesitatingly recommend this new invention to the consideration of every Agriculturist in the country.

W. MARTIN, *Ch'n.*

CARRIAGES—STOVES—FURNITURE, ETC.

Judges. JOHN LOCKWOOD, - - - *Milwaukee.*
L. F. BROWNELL, - - - - ——
W. W. THORNE, - - - ——

This Committee simply reported the following awards of premiums:

S. G. Jones, Milwaukee, Hickory Buggy, disc..... ..... $3
Sweet, Brant & Co., Fond du Lac, Pedlar's Wagon,..... 5
Barnes Bros., Milwaukee, 2d premium Shifting Top Carriage,..... 4
John Ogden, Milwaukee, 1st premium Buggy, two seats,..... 7
....do.....do.....do.....do.. one seat,..... 5

CARRIAGES, STOVES, FURNITURE, ETC.,—(continued.)

P. S. Smith, Janesville, Briska Double Carriage,.. 10
..... do.....do....2 seated Single Sleigh,..... 3
.... .do.....do....Double Sleigh,..... 5
G. P. Hewett & Sons, Milwaukee, Ornamental Parlor Stove,..... 2
.....do.....do..... do.... 2d premium Cooking Stove "Economist," 2
Goodrich & Johnson, Milwaukee, Tubular Top Coal Furnace,..... 3
.....do.....do....Spiral Furnace for wood,..... 3
.....do.....do....1 Double Oven Cooking Range for coal,. 5
.....do.....do....2d Bay State Cooking Stove, coal, ... 2
.....do.....do 1st premium Dr. Bushnell's Coal Parlor Stove, ... 2
Goodrich & Johnson, Milwaukee, Pyramid Hall or Office Stove,..... .. 2
.....do..... .....do.... Hollow Ware,..... 2
.....do..... .....do....Chilton's Trio Portable Furnace,....dip.
.. ..do..... ....do....Sanford's 1000 Challenge Heater,...dip.
Walworth, Hubard & Co., Gas Cook Stove,..... .....dip. & 3
C. Shepard, Milwaukee, Stewart's Cook Stove for wood,..... 3
.....do.....do.....do.....do....for Coal,..... 3
L. Bonnel, Milwaukee, 2d premium Fancy Parlor Stove, wood,..... 2

COOPERAGE, BASKET WARE, ETC.

Judges. { H. W. Hayes, - - - *Palmyra.*
E. B. Dickerman, - - - *Milwaukee.*
E. L. Phillips, - - - ——

The number of articles in this class was not large, and the duties of your Committee have not been very arduous. Some two or three gentlemen who had made large shipments of Willow Wares for the Exhibition, either did not receive them at all or else too late to entitle them to compete. Justice to the other roads, requires the statement, however, that so far as the articles intended for this class were concerned, all complaints were limited to the Milwaukee and LaCrosse Company.

Respectfully,

H. W. HAYES, *Ch'n.*

CABINET WARE—LEATHER—BOOTS AND SHOES—INDIA RUBBER GOODS, ETC.

Judges. { H. W. Hayes, - - - *Palmyra.*
E. B. Dickerman, - - - *Milwaukee.*
E. L. Phillips, - - - ——

Your Committee have discharged their duties and submit the following awards:

J. H. Broenen, Milwaukee, 1st premium Ladies' Work Table,..... $3
A. D. Seaman,....do..... best assortment Cabinet Ware,.....dip.

CABINET WARE, LEATHER, ETC.,—(continued.)

M. Quigley, Watertown, 1st premium on Badger State Extension Table,.. 3
Tusshaeller & Bros., Milwaukee, 1st premium on Harness Leather,..... 2
F. & J. Eingelbreekt, Milwaukee, best specimen Colored Sheep Skins,.... 2
C. L. Robinson, Waukesha, best Sole Leather,..... 2
J. M. Alcott, Milwaukee, best specimen India Rubber Goods..... 2
S. A. Coleman, Racine, 1st premium Hemlock Tanned Calf Skins,..... 2
Mrs. Wm. Gething, Milwaukee, best specimen Ornamental Leather Work, 2
Atkins, Steele & Hoyt, Milwaukee, best general assortment Boots and Shoes on exhibition,..... .....dip.
Franz Trowling, Watertown, 2d premium on Boots,..... 2
James Campbell, Milwaukee, premium case Patent Leather Boots, disc... 3
Chas. Bantz,.....do...premium case Boots & Shoes, disc... ...dip.
McDougal, Fenton & Co., Milwaukee, 2d premium on case Men's Boots,... 2

The samples of Leather exhibited by Mr. Robinson, were tanned by a new process, and have a very fine appearance. We, of course, cannot judge so well of its durability by simple inspection.

Respectfully, on behalf of Committee,

H. W. HAYES, *Ch'n.*

TEXTILE FABRICS, CLOTHING, ETC.

Judges. { SAMUEL CHANDLER, - - - ——
LEWIS S. BARNUM, - - ——
CHESTER STEELE, - - - —— }

Your Committee have carefully examined the articles in the Class to which they were appointed, and report the awards as follows:

G. H. Stewart, Beaver Dam, 1st premium Satinet..... $5
.... do.....do.... Wool Blankets,..... 5
P. M. Perkins, Burlington, 1st premium Narrow Cloth,..... 5
.....do.....do.....do..... Wool Flannel,..... 3
B. Throop, Milwaukee, 1st premium Men's Hats and Caps,..... 2
....do.....do.....do.... Boy's..do.....do 2
....do.....do.....do.... Furs,..... 2
....do.....do.....do.... Gent's Fur Gloves,..... 2
....do.....do.....do.... Ladies'... do..... 2
J. A. Swain,...do.....do.... on Clothing,..... dip.
G. K. Fox,.....do.....do.... Machine Knit Hosiery,..... 5

A Fur Robe, entered by G. F. Milentz could not be found.

Respectfully,

S. CHANDLER, *Ch'n.*

SILVER WARE—CUTLERY—BRITANNIA, ETC.

Judges,.. { WILLIAM GENETT, - - - *Madison.*
V. W. ROTH, - - - *Milwaukee.*
JULIUS A. WEBBER, - - *Milwaukee.*

Your Committee on Silver Ware, etc., report as follows:

Julius F. Webber, Milwaukee, best Silver Goblet, ... Dip.
Goodrich & Johnson, Milwaukee, best sample Britannia Ware,..... Dip.
Blair & Persons, Milwaukee, best specimen Silver Ware and Table Cutlery, ... Dip.

The Pitcher and Cup entered by George R. Chittenden, of Milwaukee, were premium articles themselves, and we could not, therefore, make any award in their favor. The Silver Goblet, to which we have awarded a Diploma, was considered deserving of a special notice.

Respectfully,

WILLIAM GENETT, *Ch'n.*

LIGHTING APPARATUS.

Judges,.. { A. G. HANFORD, - - - - *Waukesha,*
JOHN LOCKWOOD, - - - *Milwaukee.*

Your Committee concur in the following awards:

J. F. Perkins, Milwaukee, best Portable Gas Lamps,.....Dip.
—— Baldwin, Milwaukee, Baldwin's Gas Regulator,..... 5

The Portable Gas Lamps exhibited by Mr. Perkins, are really a good thing; and we would recommend Mr. Baldwin's Gas Regulator as one of the best articles, for the purpose in use.

Respectfully submitted.

JOHN LOCKWOOD.

DOMESTIC MANUFACTURES.

Judges,.. { MRS. A. G. HANFORD, - - *Waukesha.*
MRS. E. W. EDGERTON, - *Waterville.*
MRS. H. L. PALMER, - - *Milwaukee.*

The Committee on Domestic Manufactures present the following list of awards and report:

Miss C. Peffer, Pewaukee, best pair Woolen Fringe Mittens, juvenile,.... $2
F. T. Weld, Greenfield, best 15 yards Rag Carpet, ... 3
....do.....do..... pair Stockings,..... 1
....do.....do..... ... Woolen Mittens,..... 1
....do.....do..... pair Striped Mittens,..... 1

DOMESTIC MANUFACTURES,—(continued.)

Mrs. J. H. Dodge, Milwaukee, Child's Dress,	2
Miss L. Ludington,....do.... Knit Blanket Shawl,	5
Miss L. J. Peffer, Pewaukee, 2d best pair Woolen Stockings, juvenile,	1
Mrs. R. S. Andrews, Milwaukee, Knit Shawl,	2
.....do..... ....do.... Collar and Cuffs,	2
Miss C. French, Madison, Gent's Shirts,	2
.....do.....do... 2d Worsted Rug,	1
Mrs. C. G. Cummings, Milwaukee, Shawl,	2
Ira Blood, Vernon, best pair Stockings, juvenile,	2
....do.....do..... Skein Yarn,	1
Mrs. D. A. Olin, Milwaukee, white Quilted Spread,	2
.....do. .....do ... Quilted Skirt,	2
.....do.....do.... Foot-Stool, juvenile,	1
Mrs. Shanks,..... .do.... Collection Shirts, dis.,	2
Mrs. Griffith,.....do.... 1st premium 2 Infant's Shirts, dis.,	1
Austin Kellogg, Princeton, Lambskin Coat, Gloves and Mittens,	Dip. and 2
J. L. Davis, Milwaukee, Cloak in Case,	2
Mrs. J. DeGraff, Brookfield, white Quilt,	2
John Gale, Merton, Pair Wool Socks,	1

In addition to the simple awards the Committee have a word to say to exhibitors, especially to the disappointed ones. We advise them in future to read attentively the rules and regulations of the Society, especially those concerning the particular class in which their articles are embraced. If they would have the labor of their brains and hands properly appreciated and considered, take heed that each minutia of those requisitions is faithfully complied with. If any are disposed to doubt the rightness of our taste, efficiency or capability, see if they have not in this particular been shortcoming. The duties of a committee on a class embracing so large and varied a list of articles as would come under the department of Domestic Manufactures, are no *sinecure*, as we, who have for several hours on two successive days, stood and walked, and searched out, and consulted over articles, can testify.

The desire to treat with due regard every article which the hands of industry have here presented, has been a paramount one. We sympathize with and appreciate the feelings of exhibitors. This feeling has prompted us to leniency in some cases where our judgement supported us in the belief that the articles were within the rules, and that the certificate to that effect was an oversight.

It is a simple thing for *you* to write a few lines and attach to each article. While it would be too much for you to expect of

any Secretary, in the hurry and pressure of business, taking down entries, that he should listen to and record all your explanations and assertions.

We feel that of all articles of woman's handiwork, nothing, (unless it may be bread and butter,) comes so especially within the scope of our Society as the class given in our charge.

The feeling that we had to pronounce judgment upon the products of useful efforts of our *home women*, performed in sober busy hours, and not in hours of elegant leisure, added weight to our responsibility.

We would say to our young friends, if they knew with what a kindly eye, kindly feeling and appreciation we handled each article recorded as "juvenile," they would be very industrious the coming year, and give the committee a good long day's work at our next annual gathering.

On behalf of the committee.

MRS. MARY A. C. HANFORD.

MILLINERY.

Judges,.. { MRS. S. S. DAGGETT, - - - *Milwaukee*,
MRS. JOSEPH SMITH, - - - ———
MRS. E. W. EDGERTON, - - - *Summit*.

There were but two entries in this Class, and the following is our only award:

Mrs. M. Ellis, Milwaukee, premium on Honiton Lace, dis. .....Dip. and $5

Mrs. Ellis' Lace is too well known to need an extended notice. The articles exhibited by her at this Fair are of superior merit, and well worthy of the highest premium offered.

MRS. S. S. DAGGETT.

ORNAMENTAL NEEDLE, SHELL AND WAX WORK.

Judges,.. { MRS. H. W. HAYES, - - *Palmyra*.
MISS M. A. PECK, - - ———
MRS. J. W. STILMAN, - - ———

Your Committee would report that the display of articles in this class was very good indeed; giving evidence of a growing

interest in the Annual Exhibitions, on the part of those who are skilled in the production of articles included under the head of Needle, Shell and Wax Work. It was a difficult matter for the Committee to decide, in many cases, in favor of what articles their decisions should be made; but, after a careful examination and comparison, they all concur in reporting the following awards:

Miss Sarah Campbell, Portage City, premium specimen Needle Work,	$1
Chas. F. Miller, Milwaukee, ... do..... Hair Work,	½
.....do.....do.....do..... Wigs,	1
Agatha Dyke, Milwaukee, premium on Canopy Pillows, dis.,	2
Daniel W. Gaetz, ..do.....do.... Embroidery for Arm-Chair,	2
.....do.....do.....do. .. Worsted Embroidery,	2
.....do.....do.....do... Pair Embroidered Slippers,	2
.....do..... ..do.....do.... Netted Shawl, juvenile,	2
.....do.....do.....do.... Crotchet Table Cover, juvenile,	2
J. W. Gaines.....do.....do.... Case Fancy Hair-Work,	2
Alex. McNab,.....do.....do.... Embroidered Ottomans,	2
.....do.....do.....do.... Embroidered Slippers,	1
Miss S. L. Harris,...do.....do.... Hair Head-Dress, dis.,	1
Mrs. Ruger,.....do.....do... Muslin Embroidery,	1
Miss Clara Lynde,..do.....do. .. basket Wax Flowers,	3
.....do..... ...do.....do.... Ottoman Cover,	2
Caroline Wallamer,.,do.....do.... Case Hair Flowers,	2
Mrs. A. Ross, 2d best Fancy Hair-Work,	1
Mrs. D. L. Thayer, Columbus, premium Embroidered Pocket Handkerchief,	1
Mrs. Charles Sayles, Afton, premium Hair-Wreath,	1
Mrs. Mary Austin, Milwaukee,..do.. Net Worsted Shawl,	2
Mrs. L. Levy,.....do.....do.. Embroidered Blanket,	2
Mrs. F. H. Toole,.....do... . .do.. Embroidered Skirt,	2
J. F. Raleigh, Whitewater, ...do.. Case Fancy Bead-Work, (by 2 blind girls,)	2
Miss V. Foster, Waukesha, premium Embroidered Dress,	2
Mrs. M. Ellis, Milwaukee, premium on Embroidery,	2
Mrs. R. Gould,....do.....do..... do	1
Miss Langdon,....do.....do.... Embroidered Chair-Cover,	1
E. W. Pratt, Beaver Dam,....do.... Domestic Embroidery,	1
Sidney Squires, Greenfield, best Embroidered Lamp-Mat,	1

The Committee have pleasure in particularly noticing the Wigs entered by Chas. F. Miller, of Milwaukee, the several specimens of Crochet Work entered by Mr. Gales, and executed by a little girl of eleven years of age, J. W. Gaines' case Fancy Hair Work, and also of the case of Hair Work exhibited by M. Campbell, of Chicago. This last being of foreign origin, was not entitled to a premium, but was, nevertheless, the best work of its kind on exhibition. The case of Hair Flowers, by Caroline Collamer, of Milwaukee, was very

fine, and elicited much praise. The Embroidered Dress, by Mrs. Ellis, is likewise deserving of special commendation.

All of which is respectfully submitted, on behalf of Committee.

MISS M. A. PECK.

PRINTING AND BOOK-BINDING.

Judges... S. L. ROOD, - - - *Milwaukee.*
D. McBRIDE, - - - *Mauston.*
H. L. RANN, - - - *Whitewater.*
HARRISON REED, - - - *Madison.*

Your Committee respectfully report that but few entries were made in this class, so that there has been but little competition. Of those who exhibited, the following list embraces such as we deemed worthy of the premiums offered by the Society:

Starr & Son, Milwaukee, 1st premium Cards in frame,..... .. 3
G. W. Tenney, Monroe,.. 2d....do.....do.....do..... 2
Starr & Son, Milwaukee, 1st premium Handbills,..... 3
S. W. Smith, Manitowoc, 2d....do.....do.... 2

The above specimen, by S. W. Smith, of Bronze Bill Printing, by Roarer's new process, is considered well worthy of particular notice.

Respectfully submitted,

D. McBRIDE, *Ch'n.*

MUSICAL INSTRUMENTS.

Judges,.. MRS. S. J. THOMPSON, - - *Milwaukee.*
T. D. PLUMB, - - - *Madison.*
ROBERT BOYD, - - - *Milwaukee.*

The duties of your Committee on Musical Instruments have been remarkably light—only one instrument having been entered for exhibition! Mr. Farrington, of Milwaukee, has the honor of being the sole representative in that most interesting branch of trade and the mechanic arts; and

Whereas, The Rosewood Piano exhibited by Mr. Farrington is a soft-toned and beautiful instrument, yielding such notes as even Thalberg would delight to hear; and

Whereas, Your Committee, and the multitudes of auditors who, from time to time, gathered about the said instrument, derived much pleasure from the music brought forth by sundry performers; therefore,

Resolved, That there be, and there is hereby awarded to the aforesaid J. S. Farrington the Diploma of the Society.

Respectfully submitted, on behalf of the Committee.

T. D. PLUMB.

WORKS OF ART.

Judges,.. { M. W. SPAULDING, - - - - ———
MRS. I. A. LAPHAM, - - - *Milwaukee*,
W. P. JONES, - - - - - ———

The Committee on Fine Arts make the following awards and report:

T. P. Collingbourne, Mil., premium on Signs and Marble Patterns, Dip.
S. M. Brooks, Milwaukee,.....do....largest and best display of Oil Paintings,.....Dip. and 5
Augustus Fox, Sen., Milwaukee, premium 2d best display of Oil Paintings, 3
Louis Lipman, Milwaukee, premium Map Engraving and Finishing,....Dip.
M. Larkin,.....do.....do..best specimen Pen Drawing,.....Dip.
M. Eeles,..... do .....do..Carving on Marble,.....Dip.
R. P. Crapo, ...do....best Water Colord Photographs,.....Dip.
....do .....do....best specimen Melainotypes,.....Dip.
. ..do.....do....best specimen Daguerreotypes,.....Dip. and 5
....do.....do....2d best specimen Ambrotypes,..... 3
Mrs. C. A. Butler,..do....2d best Crayon Drawing,..... 2
E W. Fowler,.....do....best Ambrotypes, ...Dip. and 5
John Marr,..... do....best Wood and Copper Seals, and Engraving, Dip.
L. Lincoln, ...do....best specimen Penmanship,.....Dip.
H. C. Kach,..... .do....best India Ink and Pencil Drawing,.....Dip.
Julia R. Wheeler, Wauwatosa, 2d best Pencil Drawing,..... 2
R. A. Clifford, Milwaukee, 2d best Daguerreotypes,..... 3
....do.....do.....best Street Views,.....Dep.
....do.....do.....best Plain Photographs,.....Dip.
....do .....do.....best Oil Painted Photographs,.....Dip. and 5
J. Gormley, Milwaukee, best Carving in Wood,.....Dip.
Mrs. D. Johnson, Waukesha, best Water Colored Drawing,... ..... Dip.
Mrs. D. Phelps, Milwaukee, best Italian Painting,.....Dip.
J. P. Roe, Muskego, best Animal Drawing..... 2
T. W. Clapp. Broadhead, 2d best Pen Drawing,..... 2
Wm. Lantz, Milwaukee, best specimen Ivory Carving,.....Dip.
Mrs. D. Phillips, Milwaukee, best Oriental Painting,..... 2
....do.....do.....2d best Grecian..do..... 1
S. W. Martin, Horicon, 2d best Oriental Painting,..... 1
S. M. Brooks, Milwaukee, best Portraits,.....Dip.
..do.....do.....best Landscape from Nature,..... 2
F. J. Fox,.....do.....2d best Animal Painting,..... 3
....do.....do.....best Crayon Drawing..... 2
Miss Clara Lynde, Milwaukee, best Grecian Painting,..... 2
Miss J. Tompkins,...do..best specimen Fruit Painting,..... 2
C. Reuter,. .....do..best Water Colored Flower Painting..... 2
Pierce County Agricultural Society, 2d best specimen Mapping.. 2
Miss C. French, Madison, premium on Oil Painting of Fruit and Fish, dis.Dip.

REPORT.

1. In regard to the specimens of carving in wood, presented us by Messrs. Voight & Gormley, the Committee would remark that the production of Mr. Voight, was really a fine specimen of workmanship ; but in making the award, the nature of the material was taken into consideration, together with the depth of the carving, bringing the figures into bolder relief. Especially was the clock case offered by Mr. Gomrley, deserving of particular mention on this account.

2. Mr. Murton's pen-drawing, was one of the finest specimens of art in that line, we were called upon to notice. One of his drawings was so delicately executed, as to be scarcely distinguishable from lithograph.

3. Mr. Martin, a self-taught artist, exhibited some highly creditable specimens of penmanship and pen-drawing, which deserve honorable mention. His executions in ornamental penmanship, were indeed fine, and would recommend him as showing all the requisites of a fine artist, without teacher.

4. The collection of paintings presented by Mr. Brooks, were all, without exception, fine specimens of Art. Although the entry of the works of professional artists at such exhibitions, renders competition for premiums extremely difficult for those who indulge only occasionally in the use of the brush, so that some have deemed it almost unjust to allow long established artists to take premiums at Agricultural Fairs—nevertheless, the Committee would recommend that the past policy be adhered to, as that best calculated to educate the public taste and enhance the estimation of the Society's diplomas.

5. Mr. Lincoln, offered the best specimens of business hand, and Ladies' epistolary writing ; for these, the Committee award the Diploma, desiring rather to encourage the practical, than the ornamental style of penmanship, as the former is not only more in demand for the everyday requirements of life, but presents a field for wider competition, into which the Diploma may invite even the pupils of our public schools to enter.

We would suggest that in the Premium List for another year, a distinct premium be offered for each of the two styles named.

6. Two specimens of Oil Paintings, by Master L. T. Merrill, a boy of only 11 years, were the admiration of the Committee, and are deemed worthy of special mention. Master Merrill may well be encouraged to persevere in his artistic efforts.

7. Isothermal Map, by I. A. Lapham, Milwaukee. This Map was not offered for competition, but the Committee cannot pass it without recommending it as exhibiting great research, on a most interesting subject, and worthy the attention of students of climatic geography.

In conclusion, the Committee would report, that in many cases the competition was so close, that it was difficult to determine between the articles under consideration, and in most cases we have given the reasons in our notes. The burden has come upon three, out of the six, appointed upon the Committee, which rendered it more difficult to give that consideration to all the articles, which perhaps, they deserved. On the whole, the display in this department was exceedingly creditable, and, as regards merit, ranked higher, we should judge, than previous exhibitions.

All of which, is respectfully submitted.

H. W. SPALDING, *Ch'n.*

MISCELLANEOUS DEPARTMENT.

Judges,
- ORRIN GUERNSEY, - - *Janesville.*
- GEO. CAPRON, - - - *Madison.*
- E. D. MASTERS, - - - *Jefferson.*

Your Committee would report that their duties have been very arduous, and that they have labored under many perplexities and disadvantages, besides having to examine hundreds of articles in this department. They hope, therefore, to be ex-

cused by an indulgent public, if there should be just cause for complaint; for they have endeavored to do justice to all interested. The following is our list of awards:

Strohn and Reitzenstein, Milwaukee, premium on Cigars,.....dip.
John Dearsley, Racine premium on Colley's Improved Clothes Dryer,..... $2
J. J. McGrath & Co., Milwaukee, 1st premium Paper Hangings and Decorations,.. .....dip.
J. J. McGrath, Milwaukee, 1st premium on Window Shades,.....dip.
T. P. Collingbourne, Milwaukee, 2d premium on Window Shades,..... ... 2
.....do..... . ..do....2d....do.....Wall Paper, and Borders 2
James Heth, Confectionery,.....dip.
J. M. Alcott, Milwaukee, Bohemian Glassware,.....cert.
R. W. Pierce, Milwaukee, Matches,..... cert.
Miss E. S. Day, Buffalo, Gold and Silver Embroidered Regalia,.....dip.
S. C. West, Milwaukee, Book Stationery,.....dip.
R. O. Kellogg, Milwaukee, best sample Soap,.....dip.
J. L. Oakley, Milwaukee, Stair Newels,.....dip.
H. A. Jung, case Gilt Picture Frames,..... ....dip.
John Ogden. Milwaukee, 2d premium on Clothes Dryer,..... ..... $1
W. & J. G. Flint, Milwaukee, Ground Coffee and Spices,.....dip.
Carlisle and Stoughton, Milwaukee, House Furnishing of Iron,.....dip.
Wm. Gething, Milwaukee, Stained Glass,..... .....cert.
H. J. Nazro, Milwaukee, Porcelain and Plated Ware,. .....dip.
Bradford & Brothers, Carpets, &c..... .....dip.
Green, Watkins & Co., Milwaukee, Pressed Brick,..... .....dip.
H. Reed, Milwaukee, best Baking Powder.. .....dip.
Herbert Reed, Milwaukee, 2d premium on Bee-Hive,..... ..... $2
I. P. Englehart, Milwaukee, Bird Cage,.....cert.
Henry Stirn, Milwaukee, 2d premium on Gilt Moldings,..... ..... $2
Anna Jung, Milwaukee, bead basket,, ... 1
Charles Gifford, Milwaukee, collection of Evergreens, disc..... 5
G. T. Melentz, Milwaukee, 2d do. bead work,..... 50c
J. H. Waldron, Kenosha, 1st do Langstroth's Bee Hive,.....dip.
Pierce County Agricultural Society, native earth paint,.....cert.
J. G. Martin & Son, Milwaukee, sample Glue,.....cert.
D. J. Garth & Co.. Hannibal, Mo., Manufactured Tobacco,..... cert.
Colby & Willey, Janesville, display of Evergreens, disc..... .. $5
Walton & Son, Milwaukee, Lead, Tin and Zinc Composition for bearings..... .....cert.
F. A. B. Becker, Milwaukee, Imitation Gilt Moldings,.....dip.

REMARKS OF COMMITTEE.

The specimens of Confectionery, by James Heth, were the finest we ever saw.

Paper Hangings and Decorations, by McGrath & Co., were splendid.

Teazles, by John Durban, the best we ever saw—superior to the French, and fully equal to the Saxony production, which are the best in the world. Why wont our manufacturers patronize and encourage our Wisconsin productions? Raised in Greenfield, Milwaukee County.

The Messrs. Carlisle and Stoughton are entitled to much credit for their enterprise in the manufacture of useful articles and for their efforts to add to the interest of the Exhibition.

Sweet, Bryant & Co's., Peddler's Wagon—splendid; workmanship very superior and material good.

Bradford & Bros. show of Furnishing Goods were magnificent. They deserve the thanks of the Society.

H. Reed's Baking Powder is an excellent invention, and ought to do away with the use of saleratus altogether, making, as we believe, much more wholesome bread.

Are well pleased with Langstroth's Bee Hive, and have awarded a diploma, in view of its convenience, economy, and general adaptation to the habits of the bee.

Some of the Evergreens by Colby & Willey were very rare and beautiful. These gentlemen are deserving of thanks for their efforts and expense in thus adding to the Exhibition in Floral Hall.

Many other articles are worthy of special mention, but the Committee have not time for the purpose.

Respectfully submitted,

ORRIN GUERNSEY, *Ch'n.*

DISCRETIONARY DEPARTMENT.

Judges. { D. S. Curtiss, - - - *Madison.*
{ Darwin Hill, - - - *Milwaukee.*

Your Discretionary Committee have had within their province nearly one hundred articles or implements for inspection; yet most of them had no competition, there being duplicates of very few and triplets of none; still we are glad to say nearly or quite all of them were possessed of enough interest to deserve your notice—except the "bear," which had been hunted off the Grounds, without coming under our observation.

Fortunately for our expedition, but, possibly, not fortunate for some exhibitors, only two of our Committee could be found for the work; but as they were, the business before them has been dispatched with as much discretion and fairness as their best judgment would permit—they being *unanimous* in every single instance, and in every award.

With these remarks the Committee respectfully submit their report—with the additional remark, that they have indicated, as near as may be, their opinion of the comparative or general merits of the articles.

Ernst Frank, Milwaukee, one transit,.....dip.
Hovey & Co. Grand Rapids, Michigan, specimens Gypsum and Land Plaster,.....dip.
Dex. St. Jorre, Milwaukee, specimen Gold Pens and holders,.....dip.
George Hammel, Milwaukee, Essence of Coffee,.....cert.
Louis Lipman, Milwaukee, mode Printing Lithographs,..... $5
Daniel Schultz, Milwaukee, 4 sets Truss Hoops,..... 3
H. Nicholson, Oak Creek, J. M. Miner's Patent Fence,..... 3
Patten and Williams, Milwaukee, variety oils,.....dip.
Charles .Henar, Milwaukee, 1st premium on Stoneware Ornamented,..... 5
S. D. Baldwin, Milwaukee, 1st do Gas Regulator,.....dip.
Lester Day, Buffalo, N. Y., Radical Cure Truss,.....dip.
Fred. Richter, Milwaukee, Beer Pump,..... 3
Z. Jones & Co., Milwaukee, Stoneware, plain,.....dip.
F. W. Schultz & Co., Milwaukee, Essence Coffee,.....dip.
Chas. Best, Chicago, Improved Railroad Car, self-coupling,.....cert.
G. Smith, Milwaukee, 1 Apple Parer,..... 2
Blair & Pearsons, Milwaukee, River and Rain Water Filter,.....cert.
I. A. Lapham, Milwaukee, Climatological Map of Wisconsin,.....dip.
E. J. Dodge, Port Washington, Iron Upsetting Machine,.....dip. & $5
J. H. Tesch, Milwaukee, Surgical Instruments,..... dip.
J. C. Gebbard, Milwaukee, 2d premium Gas Regulator,..... 3
H. W. Rice, Milwaukee, 2d do Horse Shoes,..... 2
T. Kendall, Milwaukee, 2 Fancy Clocks, (will run a year).....dip.
N. W. Askin, Berlin, Galvinized Baker,.....dip.
Goodrich and Johnson, Milwaukee, Registers and Ventilators,.....cert.
T. W. Brown, Fort Atkinson, Printer's Brass Bottomed Double Rimmed Galley,.....dip. & $3
E. W. Skinner, Madison, Mole Drainer,.....dip. & $10
J. M. Stebbens. Appleton, Wagon Spokes,.....dip.
Henry Weiskoff, Racine, 1st premium Excelsior Coffee Pot,..... $3
Goodrich & Johnson, Milwaukee, 2d do Coffee Pot,..... 2
Rutledge & Owens, Milwaukee, Horse Shoes,.....dip.
Hollman & Hayden, Milwaukee, Self-Supporting Window Pane,.....dip.
Chas. Klinstember, Milwaukee, Instrument for Measuring Velocity of Running Water,.....dip.

REMARKS OF COMMITTEE.

Among the articles worthy of special mention in the report of the Committee, the following are prominent :

Specimens of Crude Gypsum, Calcined Plaster, and Land Plaster, exhibited by Mr. Hovey, of Hovey & Co., Grand Rapids, Michigan,—good for buildings, for stucco finish, and for ornaments; but above and before all, it is valuable, essential, to farmers everywhere; and we earnestly recommend it to them as a fertilizer that will vastly more than remunerate them for the expense of purchase and application. Mr. Hovey has made arrangements to supply the Wisconsin demand for this valuable article, and farmers will henceforth be enabled to buy it at reasonable rates at almost any of the railroad stations in the State.

The Iron Upsetting Machine, by E. J. Dodge, is an admirable and useful contrivance.

Hoyt's Patent Self-Supplying Marking Brush, exhibited by G. Hatch—a simple and convenient thing—entitled to notice.

The Mole Drainer, exhibited by E. W. Skinner, performs its work well and meets a great want in our State in an admirable way.

J. M. Stebbins' Wagon Spokes are of excellent workmanship and superior timber; and inasmuch as they are, in every respect, a *home production*, we regard them as an article of especial interest to the wagon makers of Wisconsin.

In connection with the entry of spokes, Mr. S. submitted the following communication, which the Society may do well to publish with this report:

WISCONSIN STATE FAIR GROUNDS,

MILWAUKEE, Sept. 29, 1859.

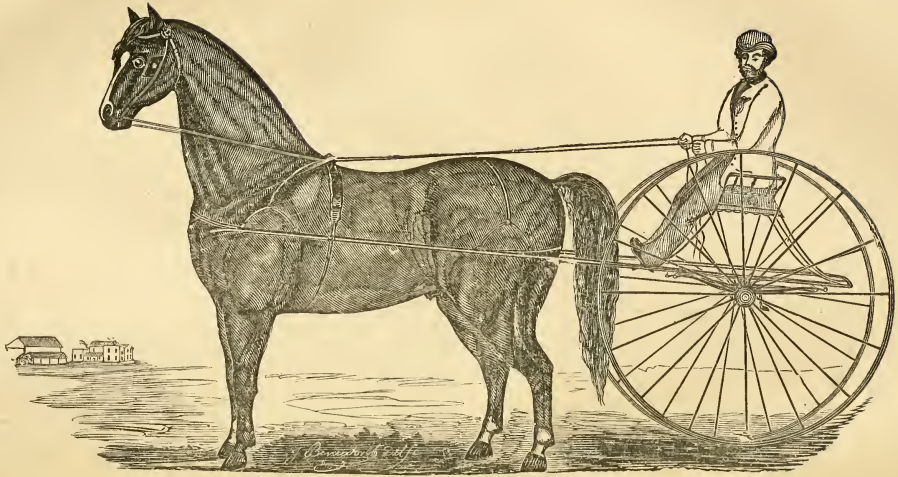
The attention of the officers of the State Agricultural Society, is called to the fact, that thousands of dollars are annually sent out of the State for the purchase of Wagons and Wood-Work for same, owing to the impression that our State does not afford a suitable article of timber for such purposes.

It is acknowledged by those who have examined the timber in Northern Wisconsin, from which the work of the Great Western Hub and Spoke Factory is selected, that it is far superior to *much* of the material used for Wagon Work at the East.

These facts, it is desirable, should be laid before the public, not more for my own benefit than for the credit of the State and the benefit of her citizens.

J. M. STEBBINS, *Proprietor.*

Other articles may have been deserving of notice, but none others occur to us as being *especially* so, and, we cannot refer



BLACK FLYING CLOUD.—Black Hawk Stallion—Owned by THOMAS MARSHALL, of Oak Grove, Dodge County. Foaled July 29th, 1851. Sire, Black Hawk; g. sire, Sherman; g. g. sire, Justin Morgan. Dam also sired by Black Hawk; g. dam, a Messenger Mare.

to all that came under our notice without making our report too voluminous.

Respectfully submitted,

D. S. CURTISS, *Ch'n.*

FARM WORK AND EQUESTRIAN EXERCISE.

PLOWING MATCH.

Judges,.. { JOHN A. FLETCHER, - - - *Johnstown.*
JONATHAN WING, - - - ————
JAMES CLARK, - - - - ————

It is an occasion of much regret to the Committee on Plowing, that so little interest is manifested in this important branch of farm work. Whether the Society takes the measures to make the trial interesting and profitable, it is hardly within our province to say, and yet we beg leave modestly to suggest, that in many of the other States, the Plowing Match is made one of the most attractive and exciting features of the Annual Exhibition.

On the present occasion, but few entries have been made. We have awarded the following premiums :

Jas. A. Boyden, Milwaukee, 1st premium on Plowing with Horses,..... $6
Jas. Osmond, Lima, 2d do..... 4
E. G. Hayden, Milwaukee, 3d do..... 2

It appears to us, that, if proper and convenient land for plowing could be had, and the programme of the exhibition were such that there would be nothing of a very exciting nature *on the tapis* at the time of plowing, the match could be made to engage the attention of all the practical farmers at least.

Very respectfully submitted,

JOHN A. FLETCHER, *Ch'n.*

LADIES' EQUESTRIAN DISPLAY.

Judges,.. { N. W. DEAN, - - - - *Madison.*
J. V. ROBBINS, - - - *Burke.*
J. A. HELFENSTEIN, - - - *Milwaukee.*
J. A. SLEEPER, - - - *Janesville.*

Your Committee on Equestrianism, after a careful comparison of the merits of the several fair performers, have decided upon the following awards:

Mrs. J. I. Case, Racine, 1st premium,..... ..... $20
Miss Ella F. Sage, Wauwatosa, (11 years of age,) 2d do..... 15
Mrs. J. Olmstead, Milwaukee, 3d do..... 10
Miss S. W. Herrick, Waukesha, 4th do..... 5
Miss Martha P. Smith, Columbus, 5th do..... 3

The riding was very good, and attracted a multitude of interested spectators.

N. W. DEAN, *Ch'n.*

EXECUTIVE MEETINGS.

MILWAUKEE, Oct. 4, 1859.

By appointment, a quorum of the Executive Committee met at the office of S. S. Daggett, in the city of Milwaukee, Oct. 4th, 1859, for the purpose of settling up the business matters of the late Fair.

Present, Messrs. Willard, Hinkley, Williams, Daggett and Powers.

President Willard in the chair.

The Committee proceeded to the consideration and settlement of the claims against the Society, and to the adjustment and determination of sundry irregular premiums awarded by the Committee on Sheep, &c., &c., and after a session of two days, adjourned.

D. J. POWERS, *Sec'y.*

STATE AGRICULTURAL ROOMS,

MADISON, Dec. 7th, 1859.

Pursuant to requirement of By-Laws, the Executive Committee met at the office of the Society on the 7th of December.

Present, Messrs. Willard, Hinkley, Atwood, Billings and Powers.

President Willard in the chair.

On motion, it was

Resolved, That the Secretary prepare and report to the Governor, for publication, the Transactions of the Society for the

years 1858 and '59, in one volume, embracing such materials as may be deemed appropriate for that purpose.

And it was further

Resolved, That the members of the Executive Committee are hereby directed to prepare articles for the same.

Owing to a thin attendance of members of the Committee, and to the fact that the accounts of Messrs. Hinkley and Daggett as the Special Committee on fitting Fair Grounds, were not yet reported, it was moved and carried, that the Executive Committee adjourn until Tuesday, the 20th inst.

D. J. POWERS, *Sec'y.*

STATE AGRICULTURAL ROOMS,
MADISON, Dec. 20, 1859.

The Executive Committee met, pursuant to adjournment, on the 20th of Dec., 1859.

Present, Messrs. J. V. Robbins, B. R. Hinkley, S. S. Daggett, David Atwood and D. J. Powers.

Vice President Robbins in the chair.

Minutes of last meeting read and approved.

S. S. Daggett reported his accounts pertaining to State Fair, in which he claimed a balance due, over and above collections, of $122,56; which sum was allowed to him, and an order was drawn to cover the entire amount of his bill, $1,805,70.

B. R. Hinkley also reported his bill of receipts and expenditures for State Fair, on which he claimed a balance due of $22,00. An order was issued to him for the amount of his entire bill of expenditures, amounting to $144.

Sundry other accounts were presented by Mr. Daggett, and allowed, and orders therefor given.

Mr. Daggett presented a communication from the Common Council of the city of Milwaukee, tendering the use of certain grounds for the Annual Exhibition of the State Agricultural Society;

Which was ordered to be placed on file, and referred to the February meeting of the Executive Committee.

On motion, it was

Resolved, That a committee of three be appointed by the Chair to take an inventory of all the property belonging to the Society.

B. R. Hinkley, Wm. R. Taylor, and J. W. Hoyt were ap pointed said committee.

The communication on the subject of awarding premiums on field crops, was then taken up. The first premium on Carrots was awarded to Eli Stilson, of Oshkosh. From his certified statement it appeared that he had raised 296 bushels on one-fourth of an acre.

The first premium on wheat was awarded to N. W. Dean, of Madison, whose certified statement showed that he had raised 59 12-60 bushels upon an acre. Variety—Blue Stem Club Wheat. As there were no other competitors in this class, who had made the requisite reports, no further premiums were awarded on field crops.

The consideration of the Manny Reaper premium was next in order; when, for the purpose of enabling competitors to establish their claims, the further consideration of the subject was postponed until the February meeting of the Committee, and the Secretary was instructed to write to certain parties on the subject.

On motion, the Committee adjourned until 9 o'clock, A. M. on Wednesday,

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WEDNESDAY, 9, A. M.

The Committee met pursuant to adjournment.

Present, Messrs. Robbins, Hinkley, Daggett, Bartlett, Atwood, Taylor and Powers.

Vice President Robbins in the Chair.

On motion of Mr. Hinkley, the Secretary elect was authorized to lease the rooms in the north-east corner of Porter's Block, for

the use of the Society, provided they can be obtained for two hundred dollars per year; and further provided that Mr. Porter will be at the entire expense of removing the property of the Society from its present location to his block.

The Committee then went into an examination of the Essays offered for premiums. Two Essays on General Farm Management were found on file. After both were read at length, and duly considered, the Committee awarded the first premium to the one prepared by John Edwards, of Rosendale, Fond du Lac County, Wis.

But one Essay on Horticulture was found on file, to which, after due consideration, the committee awarded a premium. Mr. Willey, of Janesville, was the author of the Essay.

The Treasurer presented his Annual Report, which, on motion of B. R. Hinkley, was referred to a committee of three, to be appointed by the Chair. Said Committee were instructed to make a thorough examination into the records and accounts of the Society, and to make a full and detailed report at the next meeting of the Executive Committee. The Chair appointed E. W. Edgerton, S. S. Daggett and Wm. R. Taylor as the Committee.

On motion, a Committee, consisting of J. W. Hoyt, E. W. Edgerton, H. M. Billings, B. R. Hinkley and David Atwood, was appointed to draft a new set of By-Laws, and report the same at the next meeting.

On motion, it was

Resolved, That the thanks of the State Agricultural Society and of the friends of Agriculture throughout the State, are eminently due to J. F. Willard, Esq., our late President, for his earnest devotion to, and unremitting efforts for the promotion of the great objects for which the Society was established.

Resolved, That the Secretary be requested to transmit a copy of the above resolution to Mr. Willard.

After the accounts of the members for expenses, had been audited, the Executive Committee adjourned, *sine die*.

D. J. POWERS, *Sec'y*.

STATEMENT

OF THE FISCAL AFFAIRS OF THE WISCONSIN STATE AGRICULTURAL SOCIETY, FOR THE YEAR 1859.

Receipts.

To amount of balance as per last report,.....	$1,339 44	
State appropriation,.....	3,000 00	
Receipts at State Fair from Ticket account,.....	5,200 49	
Life Memberships, per D. J. Powers,.....	301 00	
Rent of Ground, &c., by S. S. Daggett,.....	265 00	
Cash from Daggett, on Milwaukee subscrip ion.....	1,418 14	
Cash from Hinckley on Rent of Grounds,.....	93 00	
Life Memberships,.....	20 00	
		$11,637 07

Expenditures.

By amount cancelled orders for premiums, marked (C,).	$ 106 00	
" " " " for expenses, " (D,).	421 77	
" " " " marked A B C, for general expenses,.....	4,841 51	
By am't cancelled orders for premiums, marked "D,"...	2,333 50	
By am't cancelled orders for general expenses, marked (E,).....	2,648 98	
By am't cancelled orders for premiums, marked (F,)....	27 00	
By a'mt cancelled orders for premiums, marked (G,)....	378 50	
Amount to balance,.....	879 81	
		$11,637 07

Bills and vouchers for all the above items are on file in this office, and open to examination.

D. J. POWERS, *Sec'y.*

STATE AGRICULTURAL ROOMS,
MADISON, Dec. 21, 1859.

ANNUAL ADDRESS.

BY HON. ABRAM LINCOLN, OF ILLINOIS.

DELIVERED AT MILWAUKEE, SEPT. 30, 1859

Members of the Agricultural Society and Citizens of Wisconsin:

Agricultural Fairs are becoming an institution of the country; they are useful in more ways than one; they bring us together, and thereby make us better acquainted, and better friends than we otherwise would be. From the first appearance of man upon the earth, down to very recent times, the words "*stranger*" and "*enemy*" were *quite* or *almost* synonymous. Long after civilized nations had defined robbery and murder as high crimes, and had affixed severe punishments to them, when practiced among and upon their own people respectively, it was deemed no offence, but even meritorious, to rob, and murder, and enslave *strangers*, whether as nations or as individuals. Even yet, this has not totally disappeared. The man of the highest moral cultivation, in spite of all which abstract principle can do, likes him whom he *does* know, much better than him whom he does *not* know. To correct the evils, great and small, which spring from want of sympathy, and from positive enmity, among *strangers*, as nations, or as individuals, is one of the highest functions of civilization. To this end our Agricultural Fairs contribute in no small degree. They render more pleasant, and more strong, and more durable, the bond of social and political union among us. Again, if, as Pope declares, "happiness is our being's end and aim," our Fairs contribute

much to that end and aim, as occasions of recreation—as holidays. Constituted as man is, he has positive need of occasional recreation; and whatever can give him this, associated with virtue and advantage, and free from vice and disadvantage, is a positive good. Such recreation our Fairs afford. They are a present pleasure, to be followed by no pain, as a consequence; they are a present pleasure, making the future more pleasant.

But the chief use of Agricultural Fairs is to aid in improving the great calling of *Agriculture*, in all its departments, and minute divisions; to make mutual exchange of agricultural discovery, information, and knowledge; so that, at the end, *all* may know everything, which may have been known to but *one*, or to but *few*, at the beginning; to bring together, especially, all which is supposed to not be generally known, because of recent discovery or invention.

And not only to bring together, and to impart all which has been *accidentally* discovered or invented upon ordinary motive; but, by exciting emulation, for premiums, and for the pride and honor of success—of triumph, in some sort—to stimulate that discovery and invention into extraordinary activity. In this, these Fairs are kindred to the patent clause in the Constitution of the United States; and to the department, and practical system, based upon that clause.

One feature, I believe, of every Fair, is a regular *Address*. The Agricultural Society of the young, prosperous, and soon to be, great State of Wisconsin, has done me the high honor of selecting me to make that address upon this occasion—an honor for which I make my profound and grateful acknowledgement.

I presume I am not expected to employ the time assigned me in the mere flattery of the farmers, as a class. My opinion of them is that, in proportion to numbers, they are neither better nor worse than other people. In the nature of things they are more numerous than any other class; and I believe there really are more attempts at flattering them than any other; the reason of which I cannot perceive, unless it be that they can cast

more votes than any other. On reflection, I am not quite sure that there is not cause of suspicion against you, in selecting me, in some sort a politician, and in no sort a farmer, to address you.

But farmers, being the most numerous class, it follows that their interest is the largest interest. It also follows that that interest is most worthy of all to be cherished and cultivated—that if there be inevitable conflict between that interest and any other, that other should yield.

Again, I suppose it is not expected of me to impart to you much specific information on Agriculture. You have no reason to believe, and do not believe, that I possess it—if that were what you seek in this address, any one of your own number, or class, would be more able to furnish it.

You, perhaps, do expect me to give some general interest to the occasion; and to make some general suggestions, on practical matters. I shall attempt nothing more. And in such suggestions by me, quite likely very little will be new to you, and a large part of the rest possibly already known to be erroneous.

My first suggestion is an inquiry as to the effect of greater *thoroughness* in all the departments of Agriculture than now prevails in the North-West—perhaps I might say in America. To speak entirely within bounds, it is known that fifty bushels of wheat, or one hundred bushels of Indian corn can be produced from an acre. Less than a year ago I saw it stated that a man, by extraordinary care and labor, had produced of wheat what was equal to two hundred bushels from an acre. But take fifty of wheat, and one hundred of corn, to be the possibility, and compare it with the actual crops of the country.—Many years ago I saw it stated in a Patent Office Report that eighteen bushels was the average crop throughout the United States; and this year an intelligent farmer of Illinois, assured me that he did not believe the land harvested in that State this season, had yielded more than an average of eight bushels to the acre; much was cut, and then abandoned as not worth

threshing; and much was abandoned as not worth cutting. As to Indian corn, and indeed, most other crops, the case has not been much better. For the last four years I do not believe the ground planted with corn in Illinois, has produced an average of twenty bushels to the acre. It is true, that heretofore we have had better crops, with no better cultivation; but I believe it is also true that the soil has never been pushed up to one-half of its capacity.

What would be the effect upon the farming interest, to push the soil up to something near its full capacity? Unquestionably it will take more labor to produce *fifty* bushels from an acre, than it will to produce *ten* bushels, from the same acre. But it will take more labor to produce fifty bushels from *one* acre, than from *five?* Unquestionably, thorough cultivation will require more labor to the *acre;* but will it require more to the *bushel?* If it should require just as *much* to the bushel, there are some *probable*, and several *certain* advantages in favor of the thorough practice. It is probable it would develop those unknown causes, which of late years have cut down our crops below their former average. It is almost certain, I think, that in the deeper plowing, analysis of the soils, experiments with manures, and varieties of seeds, observance of seasons, and the like, these cases would be found. It is certain that thorough cultivation would spare half, or more than half the cost of land, simply because the same product would be got from half, or from less than half the quantity of land. This proposition is self-evident, and can be made no plainer by repetitions or illustrations. The cost of land is a great item, even in new countries; and constantly grows greater and greater, in comparison with other items, as the country grows older.

It also would spare the making and maintaining of inclosures —the same, whether these inclosures should be hedges, ditches or fences. This again, is a heavy item—heavy at first, and heavy in its continual demand for repairs. I remember once being greatly astonished by an apparently authentic exhibition

of the proportion the cost of an inclosure bears to all the other expenses of the farmer; though I cannot remember exactly what that proportion was. Any farmer, if he will, can ascertain it in his own case, for himself.

Again, a great amount of "locomotion" is spared by thorough cultivation. Take fifty bushels of wheat, ready for the harvest, standing upon a *single* acre, and it can be harvested in any of the known ways, with less than half the labor which would be required if it were spread over *five* acres. This would be true, if cut by the old hand sickle; true, to a greater extent, if by the scythe and cradle; and to a still greater extent, if by the machines now in use. These machines are chiefly valuable, as a means of substituting animal power for the power of men in this branch of farm work. In the highest degree of perfection yet reached in applying the horse power to harvesting, fully nine-tenths of the power is expended by the animal in carrying himself and dragging the machine over the field, leaving certainly not more than one-tenth to be applied directly to the only end of the whole operation—the gathering in of the grain, and clipping of the straw. When grain is very thin on the ground, it is always more or less intermingled with weeds, chess and the like, and a large part of the power is expended in cutting these. It is plain that when the crop is very thick upon the ground, a larger proportion of the power is directly applied to gathering in and cutting it; and the smaller, to that which is totally useless as an end. And what I have said of harvesting is true, in a greater or less degree of mowing, plowing, gathering in of crops generally, and, indeed, of almost all farm work.

The effect of thorough cultivation upon the farmer's own mind, and, in reaction through his mind, back upon his business, is perhaps quite equal to any other of its effects. Every man is proud of what he does *well;* and no man is proud of that he does *not* well. With the former, his heart is in his work; and he will do twice as much of it with less fatigue. The latter performs a little imperfectly, looks at it in disgust,

turns from it, and imagines himself exceedingly tired. The little he has done, comes to nothing, for want of finishing.

The man who produces a good full crop will scarcely ever let any part of it go to waste. He will keep up the enclosure about it, and allow neither man nor beast to trespass upon it. He will gather it in due season and store it in perfect security. Thus he labors with satisfaction, and saves himself the whole fruit of his labor. The other, starting with no purpose for a full crop, labors less, and with less satisfaction; allows his fence to fall, and cattle to trespass; gathers not in due season, or not all. Thus the labor he has performed, is wasted away, little by little, till in the end, he derives scarcely anything from it.

The ambition for broad acres leads to poor farming, even with men of energy. I scarcely ever knew a mammoth farm to sustain itself; much less to return a profit upon the outlay. I have more than once known a man to spend a respectable fortune upon one; fail and leave it; and then some man of modest aims, get a small fraction of the ground, and make a good living upon it. Mammoth farms are like tools or weapons, which are too heavy to be handled. Ere long they are thrown aside at a great loss.

The successful application of *steam power* to farm work, is a *desideratum*—especially a steam plow. It is not enough that a machine operated by steam, will really plow. To be successful, it must, all things considered, plow *better* than can be done with animal power. It must do all the work as well, and *cheaper;* or more *rapidly*, so as to get through more perfectly *in season;* or in some way afford an advantage over plowing with animals, else it is no success. I have never seen a machine intended for a steam plow. Much praise and admiration are bestowed upon some of them; and they may be, for aught I know, already successful; but I have not perceived the demonstration of it. I have thought a good deal, in an abstract way about a steam plow. That one which shall be so contrived as to apply the larger proportion of its power to the cutting

and turning the soil, and the smallest, to the moving itself over the field, will be the best one. A very small stationary engine would draw a large gang of plows through the ground from a short distance to itself; but when it is not stationary, but has to move along like a horse, dragging the plows after it, it must have additional power to carry itself; and the difficulty grows by what is intended to overcome it; for what adds power also adds size, and weight to the machine, thus increasing again, the demand for power. Suppose you should construct the machine so as to cut a succession of short furrows, say a rod in length, transversely to the course the machine is locomoting, something like the shuttle in weaving. In such case the whole machine would move north only the width of a furrow, while in length the furrow would be a rod from east to west. In such case, a very large proportion of the power, would be applied to the actual plowing. But in this, too, there would be difficulty, which would be the getting of the plow *into*, and *out of*, the ground, at the end of all these short furrows.

I believe, however, ingenious men will, if they have not already, overcome the difficulty I have suggested. But there is still another, about which I am less sanguine. It is the supply of *fuel*, and especially *water*, to make steam. Such supply is clearly practicable, but can the expense of it be borne? Steamboats live upon the water, and find their fuel at stated places. Steam mills, and other stationary steam machinery, have their stationary supplies of fuel and water. Railroad locomotives have their regular wood and water stations. But the steam plow is less fortunate. It does not live upon the water; and if it be once at a water station, it will work away from it, and when it gets away cannot return, without leaving its work, at a great expense of its time and strength. It will occur that a wagon and horse team might be employed to supply it with fuel and water; but this, too, is expensive; and the question recurs, "can the expense be borne?" When this is added to all other expenses, will not plowing cost more than in the old way?

It is to be hoped that the steam plow will be finally successfull, and if it shall be, "*thorough cultivation*"—putting the soil to the top of its capacity—producing the largest crop possible from a given quantity of ground—will be most favorable for it. Doing a large amount of work upon a small quantity of ground it will be, as nearly as possible, stationary while working, and as free as possible from locomotion; thus expending its strength as much as possible upon its work, and as little as possible in traveling. Our thanks, and something more substantial than thanks, are due to every man engaged in the effort to produce a successful steam plow. Even the unsuccessful will bring something to light which in the hands of others will contribute to the final success. I have not pointed out difficulties, in order to discourage, but in order that, being seen, they may be the more readily overcome.

The world is agreed that *labor* is the source from which human wants are mainly supplied. There is no dispute upon this point. From this point, however, men immediately diverge. Much disputation is maintained as to the best way of applying and controlling the labor element. By some it is assumed that labor is available only in connection with capital—that nobody labors, unless somebody else owning capital, somehow, by the use of it, induces him to do it. Having assumed this, they proceed to consider whether it is best that capital shall *hire* laborers, and thus induce them to work by their own consent, or *buy* them, and drive them to it, without their consent. Having proceeded so far, they naturally conclude that all laborers are naturally either *hired* laborers or *slaves*. They further assume that whoever is once a *hired* laborer, is fatally fixed in that condition for life; and thence again, that his condition is as bad as, or worse, than that of a slave. This is the "*mud-sill*" theory. But another class of reasoners hold the opinion that there is no *such* relation between capital and labor, as assumed; and that there is no such thing as a freeman being fatally fixed for life, in the condition of a hired laborer, that both these assumptions are false, and all inferences from them groundless. They

hold that labor is prior to, and independent of, capital; that, in fact, capital is the fruit of labor, and could never have existed if labor had not first existed—that labor can exist without capital, but that capital could never have existed without labor. Hence they hold that labor is the superior— greatly the superior of capital.

They do not deny that there is, and probably always will be, a relation between labor and capital. The error, as they hold, is in assuming that the *whole* labor of the world exists within that relation. A few men own capital; and that few avoid labor themselves, and with their capital, hire or buy another few to labor for them. A large majority belong to neither class—neither work for others, nor have others working for them.—Even in all our slave States, except South Carolina, a majority of the whole people of all colors, are neither slaves nor masters. In these free States, a large majority are neither hirers nor hired. Men, with their families—wives, sons, and daughters—work for themselves, on their farms, in their houses and in their shops, taking the whole product to themselves, and asking no favors of capital on the one hand, nor of hirelings or slaves on the other. It is not forgotton that a considerable number of persons mingle their own labor with capital; that is, labor with their own hands, and also buy slaves or hire freemen to labor for them; but this is only a mixed, and not a distinct class. No principle stated is disturbed by the existence of this mixed class. Again, as has already been said, the opponents of the "*mud-sill*" theory insist that there is not, of necessity, any such thing as the free hired laborer being fixed to that condition for life. There is demonstration for saying this. Many independent men, in this assembly, doubtless a few years ago were hired laborers. And their case is almost if not quite the general rule.

The prudent, penniless beginner in the world, labors for wages awhile, saves a surplus with which to buy tools or land, for himself; then labors on his own account another while, and at length hires another new beginner to help him. This say its

advocates, is *free* labor—the just and generous, and prosperous system, which opens the way for all—gives bope to all, and energy, and progress, and improvement of condition to all. If any continue through life in the condition of the hired laborer, it is not the fault of the system, but because of either a dependent nature which prefers it, or improvidence, folly, or singular misfortune. I have said this much about the elements of labor generally; as introductory to the consideration of a new phase which that element is in process of assuming. The old general rule was that *educated* people did not perform manual labor. They managed to eat their bread, leaving the toil of producing it to the uneducated. This was not an insupportable evil to the working bees, so long as the class of drones remained very small. But *now*, especially in these free States, nearly all are educated—quite too nearly all, to leave the labor of the uneducated, in any wise adequate to the support of the whole. It follows from this that henceforth educated people must labor. Otherwise, education itself would become a positive and intolerable evil. No country can sustain, in idleness, more than a small per centage of its numbers. The great majority must labor at something productive. From these premises the problem springs—"How can *labor* and *education* be the most satisfactorily combined?"

By the "*mud-sill*" theory it is assumed that labor and education are incompatible; and any practical combination of them impossible. According to that theory, a blind horse upon a tread.mill, is a perfect illustration of what a laborer should be—all the better for being blind, that he could not kick understandingly. According to that theory, the education of laborers, is not only useless, but pernicious and dangerous. In fact, it is, in some sort, deemed a misfortune that laborers should have heads at all. Those same heads are regarded as explosive materials, only to be safely kept in damp places, as far as possible from that peculiar sort of fire which ignites them. A Yankee who could invent a strong *handed* man without a head would receive the everlasting gratitude of the "*mud-sill*" ad-

But free labor says "no!" Free labor argues, that as the Author of man makes every individual with one head and one pair of hands, it was probably intended that heads and hands should co-operate as friends; and that that particular head, should direct and control that pair of hands. As each man has one mouth to be fed, and one pair of hands to furnish food, it was probably intended that that particular pair of hands should feed that particular mouth—that each head is the natural guardian, director and protector of the hands and mouth inseparbly connected with it; and that being so, every head should be cultivated, and improved, by whatever will add to its capacity for performing its charge. In one word free labor insits on universal education.

I have so far stated the opposite theories of "*mud-sill*" and "free labor" without declaring any preference of my own between them. On an occasion like this I ought not to declare any. I suppose, however, I shall not be mistaken, in assuming as a fact, that the people of Wisconsin prefer free labor, with its natural companion, education.

This leads to the further reflection, that no other human occupation opens so wide a field for the profitable and agreeable combination of labor with cultivated thought, as agriculture. I know nothing so pleasant to the mind, as the discovery of anything that is at once *new* and *valuable*—nothing that so lightens and sweetens toil, as the hopeful pursuit of such discovery. And how vast, and how varied a field is agriculture, for such discovery. The mind, already trained to thought, in the country school, or higher school, cannot fail to find there an exhaustless source of enjoyment. Every blade of grass is a study; and to produce two, where there was but one, is both a profit and a pleasure. And not grass alone; but soils, seeds, and seasons—hedges, ditches, and fences, draining, drouths, and irrigation—plowing, hoeing, and harrowing—reaping, mowing, and threshing—saving crops, pests of crops, diseases of crops, and what will prevent or cure them—implements, utensils, and machines, their relative merits, and to improve them

—hogs, horses, and cattle—sheep, goats, and poultry—trees, shrubs, fruits, plants, and flowers—the thousand things of which these are specimens—each a world of study within itself.

In all this, book-learning is available. A capacity, and taste, for reading, gives access to whatever has already been discovered by others. It is the key, or one of the keys, to the already solved problems. And not only so. It gives a relish and facility for successfully pursuing the unsolved ones. The rudiments of science, are available, and highly valuable. Some knowledge of botany assists in dealing with the vegetable world —with all growing crops. Chemistry assists in the analysis of soils, selection, and application of manures, and in numerous other ways. The mechanical branches of natural philosophy, are ready help in almost everything; but especially in reference to implements and machinery.

The thought recurs that education—cultivated thought—can best be combined with agricultural labor, or any labor, on the principle of *thorough* work—that careless, half-performed, slovenly work, makes no place for such combination. And thorough work, again renders sufficient, the smallest quantity of ground to each man. And this again, conforms to what must occur in a world less inclined to wars, and more devoted to the arts of peace than heretofore. Population must increase rapidly—more rapidly than in former times—and ere long the most valuable of all arts, will be the art of deriving a comfortable subsistence from the smallest area of soil. No community whose every member possesses this art, can ever be the victim of oppression in any of its forms. Such community will be alike independent of crowned-kings, money-kings, and land-kings.

But, according to your programme, the awarding of premiums awaits the closing of this address. Considering the deep interest necessarily pertaining to that performance, it would be no wonder if I am already heard with some impatience. I will detain you but a moment longer, Some of you will be success-

ful, and such will need but little philosophy to take them home in cheerful spirits; others will be disappointed, and will be in a less happy mood. To such, let it be said, "Lay it not too much to heart." Let them adopt the maxim, "Better luck next time;" and then, by renewed exertion, make that better luck for themselves.

And by the successful, and unsuccessful, let it be remembered, that while occasions like the present, bring their sober and durable benefits, the exultations and mortifications of them are but temporary; that the victor will soon be vanquished, if he relax in his exertion; and that the vanquished this year, may be victor the next, in spite of all competition.

It is said an Eastern monarch once charged his wise men to invent him a sentence, to be ever in view, and which should be true and appropriate in all times and situations. They presented him the words, "*And this, too, shall pass away.*" How much it expresses! How chastening in the hour of pride! How consoling in the depths of affliction! "And this, too, shall pass away." And yet, let us hope, it is not *quite* true. Let us hope, rather, that by the best cultivation of the physical world, beneath and around us, and the intellectual and moral world within us, we shall secure an individual, social, and political prosperity and happiness, whose course shall be onward and upward, and which, while the earth endures, shall not pass away.

ESSAYS.

GENERAL FARM MANAGEMENT.

The Essay which was awarded a premium of $25, by the Executive Committee of the Society, Dec. 20th, 1859.

BY JOHN EDWARDS, OF ROSENDALE.

Nothing presents a more cheerless and disconsolate appearance than an ill-managed farm. Broken down fences, and dilapidated buildings; lean-looking animals, and leaner looking fields, are some of the numerous indications that point out its location. It is true that only particular cases are especially bad, yet the general farm management of Wisconsin and of the West is far from being what it ought to be, and what it must become, before farming may assume its legitimate rank as a pleasant, profitable, and honorable employment. It is therefore not without reason, that the State Agricultural Society of Wisconsin, has offered a premium for an acceptable essay, on General Farm Management.

The truth that ought to be continually impressed upon the minds of farmers is, that farming, like any other business, must be carried on in a systematic manner; and that this is the main condition on which it will prosper, and without which, it will certainly fail. There is probably no business which is carried on with so little order as farming, and this fact explains at once the origin of the universal complaint that farming is not a lucrative occupation. Did merchants and bankers carry on their affairs in the same loose manner for twelve months, a convulsion more terrible than that of 1857, would be the inevitable result.

It is intended that the following remarks shall be strictly practical, yet without being at variance with well-established principles of agricultural science; for good practice and true science must always be in harmony with each other, since the first is but the offspring or developement of the second. It is also intended that they shall be the result in good part of personal experience and observation; and it shall be my aim, as I prefer a short essay to a tedious treatise, to make them as concise as sense and language will permit, as well as to make them particularly applicable to the present condition of agriculture in Wisconsin.

Taking for granted that a desirable farm has been bought and *paid for*, and that sufficient capital is left to make the necessary improvements, as well as to carry on properly the subsequent operations of the farm, I shall now proceed to the consideration of those improvements. However, as most western farms have but scanty improvements on them, and those of a rather dubious nature, and such as probably the enterprising proprietor would rather wish had not been made at all, I shall, for the sake of greater latitude of discussion, and a greater degree of elucidation, presume the farm to have none at all.

I shall suppose the size of the farm to be about 160 acres, knowing that to be large enough for most farmers, and much too large for a great many. Owning too much land is a crying evil under the western sun, and one that will, if not checked by some means, speedily impoverish the whole country, especially the agricultural portion of it. While the aggregate yield of the State is increasing, that per acre is diminishing, from which we may infer that the production of grain, and the deterioration of the land, are going on with a corresponding ratio; and what will be the final result of this process, it requires no prophetic sagacity to predict. Could any one persuade the farming community that it is more profitable and essential to raise large crops than to own too many acres, he would deserve well of his country, and might be safely numbered as one of her most signal benefactors.

Dwelling House.—No one can pretend to be a good manager of a farm, who has not provided decent quarters for his family. A decent house therefore becomes the first requisite; and this should in every respect be such as is worthy to form a farmer's home; it should neither be a hut nor a palace; it should be spacious without being vast, and neat without being grand. It would seem as though most farmers were vain of their skill in architecture, at least if we take their houses as specimens of it; than which, for the most part, nothing can be less charming in appearance, or less commodious in arrangement. It would save farmers much trouble, expense and discomfort, if they did not build before they had thoroughly digested their own plans, or what is better, before they had consulted some competent architect on the subject. A farm house should always have a good cellar, as well as a cistern to hold rain water, and an adjoining shed to keep wood. These useful appendages will be highly pleasing to the good house wife, and consequently immensely conducive to the welfare and happiness of the family.

Garden and Orchard.—If an abundant supply of vegetables and fruits be at all deemed essential to rustic enjoyment, then these two ancient institutions, and emblems of civilization, demand particular and honorable notice. As nothing pays better in profit and pleasure, than a well-cultivated garden, and a well managed orchard it is astonishing that these should be so generally neglected.

Many farmers have no gardens, more have no orchards, and all do not pay to them that attention which they so eminently deserve. More care on this point would materially enhance the comforts of the farmer, besides lessening those long store bills, with which they are so grievously afflicted. Therefore, it is emphatically insisted that three or four acres should at once be reserved for the above purposes. It is the farmer's first duty. When Noah left the ark, he immediately planted a vineyard; and his example should be followed by all, and especially by the first settlers upon our public territories.

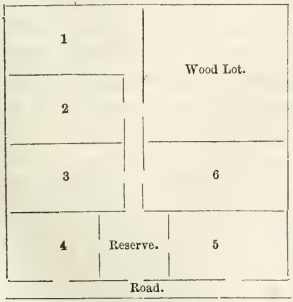
Should these persons find themselves unable to plant trees, they could certainly sow the seeds in a small nursery; and when the seedlings should begin to bear, those producing good fruit might be transplanted into the orchard, and the others left to be grafted. If this simple and certain plan of obtaining fruit had been practiced more extensively by the pioneer settlers of Wisconsin, it would have greatly added to the present wealth and prosperity of the State, as well as conduced to the comfort and health of its inhabitants. Let "*the one thing needful*," not be neglected.

Farm Buildings.—These having been proposed as the subject of another essay, all I shall do in this place will be to mention what buildings are necessary, and how they should be arranged. A farm of ordinary extent should have a stable with an adjoining hovel, with a hay-loft over both ; a hay and cattle barn ; a grain barn ; a granary and a coach house ; a corn-crib and a hog pen ; and a small tool-shop. The buildings should be so disposed as to allow of easy communication. They should also, in my opinion, be separate ; for what is gained in point of economy by having them all under one general roof, will be more than lost in point of inconvenience and danger : of inconvenience, because of having so many different things too close together, as cattle and horses, hay and grain ; of danger, because, in case of fire, the farmer must have all his wealth consumed at once, which, were the buildings apart, could hardly ever happen. The advantages of good out-buildings are self-evident, such as the security of the different crops, the great saving of fodder, the superior growth and comfort of the animals, with the economy of labor in attending them.

Implements and Tools.—The different implements employed in good farming, I shall not name in detail, but only observe generally, that they should always be of the best kind, should be well taken care of, and should always be found in their proper places ; so that no time be ever lost in looking for any of them. It is a most disorderly thing to have the instru-

ments scattered all over the farm, or huddled promiscuously together. As the manufacturer makes liberal use of those powerful auxiliaries, which nature has supplied or art invented, and is thus enabled to fabricate his wares with cheapness and dispatch, so also should the farmer avail himself of all labor-saving machinery, that he may carry on his operations with more energy, and more profit. Among these machines may be certainly reckoned a Reaper and Mower, a Threshing-Machine, a circular Wood-Saw, Straw-Cutter, &c. I trust the mechanic is born who will, before long, bring out a "Self-Binder"—the farmer certainly stands in need of it. The Tool-Shop should be supplied with saws, chisels, augers, and such other things as will suit the wants of a rough carpenter.

Division of the Farm.—The farm, to be conveniently carried on, must be divided into fields of suitable extent. On a tolerably sized farm each field should contain about 20 acres, for the size of the fields must correspond with the size of the farm. To facilitate communication with the different lots, the farm should be traversed with a lane, with a gate opening into it from each one that has no outlet into the public road. Presuming the farm to contain 160 acres, that about 40 acres of it is woodland, and that about 3 or 4 acres has been reserved for buildings, garden, and orchard, the map of the farm, thus divided, would be as follows :



For the convenience of carrying on the farm, the buildings should be near its centre, and in England they generally are so; in Wisconsin, however, owing to occasional heavy snow-drifts in winter time, it is pleasanter to have them on the main road. The fields should be numbered or named, which will greatly aid the proprietor in forming his plans, or in giving directions when absent from

home. By adopting this plan, Washington was enabled, from the camp, not only to give orders to his agent at Mount Vernon concerning the general management of his estate, but to enter into minute details about the treatment of particular fields. The area of each field should also be accurately ascertained, in order better to apportion the seed to the ground, as well as to determine exactly the yield of it. This would effectually exclude that habit of wild guessing so fashionable among western farmers, and which prevents alike themselves from knowing the true yield of their own acres, and the State from collecting any reliable statistics of its own agricultural products.

With respect to the piece of woodland, mentioned as forming one of the divisions of the farm, it should be broken, cultivated, and seeded down to grass, and be ever afterwards allowed to remain in that state; by which three important ends will be answered—the trees will be saved, the land can be profitably made use of, and the appearance of the farm will be improved; and, surely, no sensible farmer will neglect to combine beauty with utility, when it may be done, not only without loss, but with positive benefit. But were the farm all prairie, the preceding plan would not have to be altered, for though no woodland would be there, it would have to be made; and consequently land would have to be reserved for that purpose, for farmers that have trees should be sparing of them, and those that have them not should plant them.

Fences and Gates.—In order to protect the crops, and to keep the stock within proper limits, good fences become absolutely necessary; economy dictates that they should in all cases be substantially built, as they will last longer, and answer more effectually all the purposes of a fence. The wire-fence and the osage-orange have been proposed and tried, but the former of these is much too frail, while the latter is much too uncertain. I think a board fence is as good as any I have seen; it is cheaper, and takes up less land than the common rail fence, besides being much more elegant in appearance. The posts should be put in, upright or inverted, no matter which, fully

2 1-2 feet deep. Red cedar, burr oak, and white oak, make the best posts. A well hung gate is at all times much preferable to a pair of bars, therefore, in passages much frequented, it should always be substituted for them. It is a good plan to have the gates slide horizontally, as they will be much more convenient, and much less liable to damage, than the ordinary kind.

Most of the preceding remarks may not be quite relevant to the subject of this essay, but when it is considered how destitute most western farms are of requisite improvements, and how difficult it is to carry on a farm without them, they may on that account be excused, if not justified.

STOCK.

Proportion of Stock.—The farm being now well provided with fences and buildings, is ready for the rearing of stock, and the production of grain ; and as there always ought to exist a certain proportion between these two great branches of Agriculture, it may well be inquired what that proportion is, for this is the foundation of all good farming ; and if it be not strictly or approximately observed, one of two things will always happen ; either the stock will suffer for want of food, or the land will suffer for want of manure ; so if an excess take place either way, it must be remedied by diminution of stock, or by the purchase of fertilizers, for the fertility of the farm must be uniformly maintained or increased. It appears, therefore, that on a farm of mixed husbandry, as much stock should be kept as is sufficient to return into the fields all the elements abstracted from them by the different crops of grain. This principle is general, and will apply in all cases. It is calculated that two acres of rich meadow-land is enough to supply one head of stock with pasture for the summer, and with hay for the winter ; but this quantity, owing to dry summers, and a dry atmosphere, is too small for Wisconsin ; still, about three acres ought to suffice for that purpose here, especially if the hay be aided by well-cured cornstocks, and oat-

straw. Hence, a farm of 160 acres, under the system of rotation advocated in this paper, ought to maintain twenty head of stock, including a span of horses, and a mare, and a yoke of oxen, with thirty South-Down sheep, that the farmer may have a supply of nutritious mutton for his table, as well as a supply of wool for the market. How many of the cattle should be milch cows, and how many of them steers, will depend altogether upon the taste of the manager, as it leads him to manufacture butter and cheese, or to breed animals for the market. The stock should be of a choice, though not of a fanciful kind, for a few excellent beasts are much preferable to a host of hungry "scalawags," with which so many Wisconsin farms are infested.

Treatment of Stock.—In England, soiling is extensively practiced in some places According to this system, the animals are confined in stables or yards all summer, and fed on green fodder. Where land is high and labor low, as in that country, it may answer very well; but with us, where just the reverse is the case, I am afraid it would be found too expensive. Excluding, therefore, the consideration of this plan of feeding, the summer treatment of horses and cattle becomes very simple, consisting entirely in providing them with plentiful pastures and abundance of good water, with an occasional allowance of a little salt. However, as the treatment of stock is an important subject, I shall, in order to be more explicit, treat in detail of the management of each kind, with reference, more particularly, to winter management.

Horses.—He that would have a good horse, must use him pretty much as he would himself; for though this animal is naturally strong and healthy, yet he is of delicate structure, and very liable, by abuse or mismanagement, to become weak or disabled. As a general thing, horses are fed too highly and driven too fast, than which nothing can be worse for their health and durability. If they are overfed with grain, they speedily become diseased, from the fact of the quality of their food

being too rich and concentrated. The proper way to feed them is to mix a suitable quantity of grain or meal with cut straw or cut hay, by which they will be obliged to live upon a diet which is at once both coarse and nourishing; they should also have a supply of carrots or ruta bagas occasionally, in winter, or regularly in spring; they will be eaten with avidity, which sufficiently testifies their beneficial effects. Horses should now and then have a supply of salt and ashes, and this is all the physic they require; they should not be habitually blanketed, as it makes them too delicate. It is enough if it be done when they stand out in the cold, or after they have returned from a journey. It is needless to say that thorough grooming is a most essential element in the management of the horse. What has been said of the horse, will, if not too rigorously interpreted, apply also to colts.

Milch Cows.—Cows should receive more attention than the rest of the cattle, as they are expected to bring calves in spring, and to give milk in summer, and there is nothing that will prepare them to fulfill more effectively these offices than good wintering. To attain this object, they should be stabled, and their dung daily cleaned out, and their places littered plentifully with straw; it is a sorry thing to see animals with frozen dirt hanging all around them, yet it may be seen too often.—Indeed, many persons appear to think, if their animals have good shelter, that food and cleanliness may almost be dispensed with; and this may be the reason why stalled cattle often look worse than those that run loose in the yard. Cows should be fed with good tame hay, with a liberal allowance of roots, for the preservation of which, a cellar presumed to have been built under the barn, would be a proper repository. As spring approaches, they should have a little allowance of meal daily; this will add to their strength as well as impart a glossy appearance to their coats; it is very necessary that they, as well as all other stock, should be fed and watered regularly. Should there be no brook near, a well might be dug in the yard, or a cistern built near the barn, for it is a cruel practice to drive

YOUNG FREMONT.—French Merino—Bred and owned by GILES KINNEY, Whitewater. First shorn at 2 years of age. Weight of fleece, well washed, 34 lbs.

creatures to drink, in the face of a north-wester. Yet such cruelty is very common in the West.

Young Cattle and Calves.—Steers and other young stock deserve a proper share of attention in winter ; they ought to have warm sheds into which they can retire at leisure. The sheds must be furnished with racks, that none of the fodder, consisting of hay and good oat straw, be wasted by spreading it, according to the vulgar custom, all over the yard, by which, perchance, half of it is consumed, and the other half destroyed. Care must be taken that animals of the same age be yarded together, that they may not be disturbed and hooked by the bigger ones. Heifers should always be two years old, before they are allowed to go to bull. By observing this precaution, they will gain largely in size and vigor. Calves should occupy a separate shed, with an adjoining yard, in which they may exercise themselves ; it is a bad plan to shut them up in narrow quarters ; they should always have as much freedom as is compatible with their health and the development of their bodies. Calves will do well on hay, with a small allowance of meal, and occasional doses of flax-seed, to keep them in condition. It is very important that calves be well-wintered the first year, for if neglected then, they become stunted in their growth, and mal-formed in their limbs, and they will never afterwards get over these defects. It is also important that they come early, for a late calf will never be worth more than his hide—a June or July calf is always a most miserable looking object.

Sheep.—Sheep are valuable animals on a farm, on account of the useful and various offices they perform ; they keep the field clear of weeds and briars, glean them after harvest, yield an annual crop of wool and lambs, and finally give up their carcasses for mutton. Where sheep are kept exclusively for their wool, the Merinoes, are doubtless preferable to all others, but for general use, the South-Downs are the best ; their wool is respectable, while their mutton is superb, and infinitely superior to pork as a general article of diet. I am convinced that

if sheep stood as high in the estimation of the western farmer as hogs, his gain in health and profit would be immense. Sheep should run on dry land, as there is nothing more detrimental to their health than dampness. When yarded for the winter, the flock should be formed into separate divisions, that the strong may not oppress the weak, and that the sickly may not contaminate the healthy. They must be fed with good hay, with a very liberal allowance of roots; indeed in many parts of England sheep are wintered almost entirely on turnips, and thrive well. I attribute the lean backs and big bellies of the Wisconsin sheep to the fact of their being confined for six months of the year to dry hay without any variation. A little grain is beneficial, but beans are recommended, as contributing from their oily nature to the growth and firmness of wool. Sheep well-wintered will not slink their lambs, nor cast off their wool; hence the radical policy of their management is to keep them on a mixed and generous diet, when in a great measure, the wool and the lambs will take care of themselves.

Hogs.—As one of the objects of keeping hogs is to profitably consume what would otherwise be wasted, as swill and milk, it seems their number ought to be regulated by the number of cows, one hog to each cow being a fair proportion; were there no cows kept on a farm, this rule would fail, as indeed it should, for the farmer that would not make his own butter would not be likely to raise his own pork. The best breed of hogs is a mixture of the Berkshire and Suffolk, which will secure both fatness and bulk. It is a cheering sign of progress among us that improved breeds are rapidly working out the aboriginal Wisconsin hog, an animal as wild as a deer, as savage as the wild boar, and harder to be fatted than an Arab. During summer, hogs ought to flourish in a clover lot, with milk and a little meal in it to drink; and kept, well through the season, they could easily be finished off in the fall by the application of meal in a more condensed form. Hogs should never be allowed to run at large, as that is a positive nuisance, and it is more reasonable that their owners should fence them in, than that the

whole neighborhood should be compelled to fence them out. If hogs are expected to yield heavy pork in the fall, they must be well taken care of in winter, in opposition to that very prevalent and pernicious practice of leaving them to half starve at that inclement season of the year. As to the best general method of feeding, it appears to have been satisfactorily demonstrated by repeated experiments, that cooked food is superior to raw, and that Indian meal scalded with hot water, is better than when mixed with cold; it would, therefore, pay the farmer to erect a small cooking establishment, within convenient distance of his hog-pens, that he may be able to carry on the business of raising and fattening swine in the most economical manner possible. Of the almost universal habit of feeding hogs and other animals with corn in the ear, it may be observed, that, while all experience is against it, nothing is in favor of it but indolence and custom.

Poultry.—As the farmer, from the nature of his labor, must always have a relish for chicken and eggs, for puddings and pies, it becomes his duty to take proper care of his hens; and for this purpose he must have a hen-house, and a poultry yard, for hens will never pay if allowed to run at large, as there will be great loss of eggs, and greater loss of time in looking for them, to say nothing of the depredations of the fowls on the garden, and on adjoining fields of grain.

CULTIVATION OF CROPS.

Wheat.—Though wheat be not the great staple crop of the United States, it certainly is the great staple of Wisconsin, and as such deserves, and shall have particular notice in this paper.

Preparation of Ground.—Here I would observe, that if the ground be naturally wet, it should at once be thoroughly drained. This must be the first preparatory step, for without this, all subsequent labor on it would be entirely thrown away. If prairie, or clover and timothy sod be intended for wheat, it

should, according to the usual custom, be broken three or four inches deep, and then be left undisturbed until spring, when in order to level its surface, it should be dragged before sowing. Some farmers cross-plow such land again in the fall, or in the spring, which is always useless and always detrimental, for the furrows being cut up into square pieces, the harrow can do nothing with, but tumble them about; besides that, wild or uncultivated sward, from natural or acquired richness, requires but scanty tillage the first year, and even with that, is apt to produce too luxuriant crops. However, should cross-plowing be adopted, the tame sod ought to have it in preference to the wild; for prairie grass is more easily subdued than timothy. Ground that has been sown to oats, or planted to corn, if not too much exhausted by previous crops, is excellent for wheat; the first should be plowed in the fall and the last in the spring, as the corn-stalk roots, from the action of frost, will turn over better then. As a general rule, wheat ground should be mostly prepared in the fall, in order that the crop be put in early in the spring, as it has been clearly proved by past experience, that early sowing is one of the chief essentials in the growth of the wheat crop; that, beside, prairie land being naturally too loose, is not benefitted by spring plowing.

Seed.—The farmer should be as careful in the selection of seed-wheat, as in the preparation of the ground to receive it, for the great point is to make them both mutually adapted to each other. The seed should be clear, and perfectly free from chess and other foreign matter; the same kind should not be sown on the same farm for more than four or five years, nor on the some field for more than one or two; however, the same kind will last longer and flourish better, if frequently changed, and from a more northerly latitude. The Club will yet last an indefinite number of years if we could often renew it by a fresh supply from Canada; and if so, would it not be sound policy for the State Aricultural Society to take this matter in hand, and devise some means for accomplishing this important object? It is advisable that two or three different varieties be sown,

that in case one should fail, the other might succeed; the folly of relying on one sort was clearly demonstrated by the repeated failures of Hedge-row years ago, and by the general failure of club last year. To prevent smut, the seed must be carefully brined and limed, or what is better, sprinkled with a solution of blue vitriol; 1 1-2 oz. dissolved in sufficient water to wet the seed will do for eight bushels.

Sowing.—This may be done by hand, or by drill, but it should be well done, that there may be no loss, and that the fields may not present those streaky looks, which make one doubt whether they were sown by wind or man. On the prairies, a drill immediately followed by a roller, would do admirable work, insuring to the farmer a saving of labor and of seed, and to the seed, uniformity of depth, and evenness of planting. The quantity of seed to the acre, must be regulated mainly by the quality of the soil, and the nature of the cultivation; for it has been proved by experience that on good land well tilled, 1 1-4 bushels, drilled in, is enough, and that more would be hurtful; this is the quantity used by Mr. Mechi, of Tiptree farm, near London, who is universally acknowledged to be the most scientific, as well as the best practical farmer in England, and yet, as we are informed by himself, his wheat crops always average over 50 bushels to the acre. As a general rule 1 1-2 bushels is enough for most lands. But let not the farmer delude himself with the fallacy, that thick sowing is the only condition necessary to insure big crops.

Cutting.—Wheat should be cut when the kernel is in a doughy state, or when the narrow end of the straw has turned yellow. But though farmers must be acquainted with this rule, as well as convinced of the reasons for it, yet either from neglect, or from the want of proper resolution, farmers every year let their wheat get too ripe before they begin to cut it; not thinking that the loss from shelling must be much greater than what would occur from shrinking, had it been cut earlier; but the fact is, that it will not shrink at all, but on the contra-

ry, will be plumper, and of a nicer color, thus rendering it not only safer in the field, but more merchantable in the bin.

STACKING.—Farmers having barns will always store their grain in them, but as many have them not, stacking becomes a necessity, and it should always be done with skill and care. The losses from bad stacking throughout the West every year, must, were they accurately ascertained, be almost incredible, but they might be effectually prevented in all cases with marsh hay or oat straw threshed by flail; from the want of this cheap and simple precaution, I know farmers who have lost grain enough in one year to have paid for thatching their stacks for fifty years. In Great Britain, the practice is universally followed.

MARKETING.—Whether selling wheat comes under the head of General Farm Management, I know not, but it is evident that if the produce be not advantageously disposed of, the labor spent in producing it will, in a great measure, have been spent in vain. There is certainly a time to sell, and a time not to sell, though to determine the right time to do either, requires, I must confess, almost prophetic sagacity, and is, indeed, the hardest problem that could be proposed to the most experienced farmer or merchant in the West, and one which, if a person were to trouble his head too much about it, would speedily make him a fit subject for a lunatic asylum. In this matter the farmer must be guided entirely by his own prudence, aided by all the information in his power.

CORN.—This is emphatically the great crop of the country, and forms the very basis of its agricultural wealth. But I do not think it is cultivated in Wisconsin to the extent it deserves, having, in a great measure, been supplanted by its great rival, wheat. But every farmer ought to have half as many acres of corn as of wheat, for being very different crops, they require very different weather for their growth and maturity, hence a good crop of either could certainly be had every year, with, probably, good crops of both, most seasons. But there is an-

other advantage incidental to the cultivation of corn, which is, that the ground derives all the benefit of a summer-fallow, and that without the loss of a year's crop.

Seed Corn.—This is the very first thing to be attended to, and it must be attended to at the right time and in the right manner, for in the whole range of farming there is nothing wherein a little neglect will occasion so much loss as this. The seed should be timely gathered, and properly secured afterwards. In September, as soon as the corn begins to glaze, the manager should personally and leisurely walk through his corn field and carefully select the ripest and biggest ears, leaving the husks on them. The corn thus chosen should, on the same day, be hung up in the chamber or some place where the frost will not hurt it. All this is very simple, yet there are hundreds of farmers who, to their own great loss, annually neglect it.

Preparation of Ground.—If the corn ground is to be manured, as it should, the dung must be spread on it in the fall, and lightly plowed in. At the right time in the spring, the land must be carefully cross-plowed. The furrows should be narrow, and as deep as the strength of the team will permit; dragging or rolling might then be beneficial, but as too much tramping is hurtful to newly-plowed ground, it had better be avoided. The rows must be marked off both ways, about four feet apart, when the piece will be ready for planting, which may be done by machine or by hand, care being taken to drop no more than four or five kernels in a hill, for thick planting is as hurtful to corn as thick sowing is to wheat. Some farmers break timothy-sod and plant into corn the same season. This may be an excellent plan in some parts of New York, but I have seldom seen it answer much purpose in Wisconsin. It seems the sod wants manure, or time to rot.

Cultivation of Corn.—As soon as the young corn peeps above ground, it must be diligently guarded against all vermin, especially "gophers" and blackbirds; these may be respectable

creatures, in their own proper spheres of life, but in a cornfield they are robbers, and should be treated accordingly; therefore, let no false humanity stop the farmer's gun. "His right is paramount, and must extinguish theirs." When tall enough let the cultivator and the hoe be in active requisition. Corn should be thoroughly hoed two or three times; in fact the hoe must be kept bright all summer. In the management of corn much depends upon carrying on, in the order of time, the several operations attending it. The planting should be done about the middle of May, covering slightly, to give it a quick start; then the hoeing must begin as soon as possible, and only be discontinued when its further progress would hurt the plant.

Harvesting Corn and Corn Fodder.—Farmers ought to be careful to have their corn well cribbed, and their stalks well harvested. When the corn has become generally glazed, it should be immediately cut up and neatly shocked, for the stalks make excellent fodder, being vastly superior to marsh hay, and not much inferior to timothy for that purpose. The husking should be done in October, and as it progresses the stalks must be tied into convenient bundles— shocked together —and when the husking is over, drawn into the barn, or stacked, or what is better, formed into large conical shocks, taking care to bind their tops, that they may not be injured by rain, or scattered by the wind. Some farmers leave their stalks in the field till winter, and draw them in to the cattle, or let the cattle come in to them, but this is a most wasteful and cruel practice, and totally unworthy of a considerate husbandman.

Oats and Barley.—In point of importance, these crops are altogether secondary, particularly the last, used but little except in the manufacture of lager-beer. The fattening qualities of barley are small, and when compared with that of corn, nothing at all. Barley likes a light gravelly soil, and oats that which is heavier. As they should never be manured, except through the medium of preceding crops, the land requires no

other preparation for their reception, than good plowing and good putting in. It is good economy to cut oats when they are sprinkled, or half turned, as the straw, if well cured, makes very good fodder. Oats, like wheat, want to be put in early, and it is also important that the seed be frequently changed. Rye and buckwheat, peas and beans, are also cultivated in the West, but not so extensively as to merit discussion in this paper.

Clover and Timothy.—As these are generally raised together, it may be found convenient to treat of them together. A few years ago, the grasses were but little cultivated in Wisconsin. It is true, a few patches of lean timothy might be seen here and there, but a field of clover was a rarity. But as their value became better known, their cultivation largely increased. In some respects clover and timothy would be better apart, and in some respects would be better together. For hay they had better be apart, on account of their not ripening together. For pasture, it is preferable to have both, as timothy itself is too thin and exhausting while clover is occasionally liable to be spring-killed.

Seeding Down.—When it is intended to seed a field, it should be finely cultivated, for nothing is more important to the successful growth of small seeds than that the ground should be thoroughly pulverized. Clover and timothy may be sown in equal quantities with wheat or oats, but rather with the former, because it is put in earlier, and is a more open crop, and less liable to lodge and stifle the young grass, than the latter. On mellow land four pounds of each will be sufficient for an acre; if the land be stiff, the quantity must be doubled; a sufficient covering for grass-seed will be afforded by the roller, necessary besides to compress the soil, or to break the clods.—If clover and timothy be sown separate, the quantity of seed must be correspondingly increased. A field just seeded down, must not be grazed by sheep, nor be tramped upon by cattle when the ground is thawing in the spring.

Cutting and Curing Hay.—This is a subject not well understood by the generality of farmers, and many appear not to know the difference between curing hay and drying it up. To convert grass into nourishing hay, the principle to be observed is to abstract its moisture, without destroying its saccharine matter. Most of the hay annually harvested in Wisconsin, is much fitter for fuel than for fodder, and this fact is a striking illustration of that melancholy truth, how much innocent animals suffer from the negligence of man. Clover should be cut when in the bloom, while timothy should never be cut while in blossom, for if it be done, the hay will be dusty and very unhealthy for horses to eat. During a very hot day, the horse-rake should almost immediately follow the mower, and generally, what is cut in the morning, should be cocked in the afternoon, and if possible, hauled into the barn.

Root Crops.—It has been said that the destruction of the Turnip crop in England would half ruin the agriculture of that country, from which we may infer the great importance attached to it there, as well as the large extent to which it is cultivated. With the exception of potatoes, the root crops of the West are insignificant in themselves, and in comparison with others, vanish into nothing. This fact must be attributed, not to any great trouble in raising them, nor to ignorance of their value, but to an excessive ardor in the culture of other crops. One objection to roots, the difficulty of winter-keeping, can only be urged in the absence of a good cellar.

Potatoes. —The best soil for these is that which is dry and mellow, and abounds in vegetable matter ; they not only flourish better on such land, but are much less liable to disease.—They may be cultivated in hills or rows, but I prefer the former method, as they are more easily hoed, and more expeditiously dug. The hills, or rows, should be about four feet apart. Potatoes should be planted as early as the spring will permit. It is not advisable that many plants be put in a hill, nor that too much earth be gathered around them. Whether the

plants should be whole or cut, is an undecided point, and in my opinion, of as much importance, as whether fence posts should be upright or inverted. They must be dug about the middle of October, that they may be housed without being injured by frost, of which we often have smart touches near the end of this month. It is almost superfluous to say that potatoes, like corn, must be thoroughly hoed. Which are the best varieties, which best to yield, which best for the table, are points which the farmers can determine for themselves, for the same variety often has different names, and the one that will suit one locality the best, may not suit another at all.

Carrots and Ruta Bagas.—I think that in Wisconsin, ruta-bagas or swedes will do better than turnips, and that carrots will do better than either ; indeed, some enormous premium crops of carrots have been produced, which sufficiently prove their adaptability to our soil and climate, and the profit that would accrue to our agriculture from their more general cultivation. Ruta-bagas may be produced on any land that is rich enough, while carrots prefer that which is of a sandy texture, but rich withal ; both crops may be cultivated in drills, the former about two feet apart, and the latter little over half that distance. When the plants are big enough, they should be properly thinned. The growth of these roots mainly depends upon deep-tillage, good seed, and proper subsequent management.

ROTATION OF CROPS.

Land must have periodical seasons of rest. Like man, it must have its Sabbaths, and these it obtains by the adoption of a judicious system of rotation. But the advantages of rotation are manifold ; by it the farmer is enabled to carry on his operations in an orderly manner ; to determine beforehand, according to a general law, the future products of each field ; to increase his crops without diminishing the fertility of his land, and to vary them so as to increase his hopes of success, by lessening the chances of failure. Under any system of rotation,

the number of fields must always correspond with the number of courses in it. For Wisconsin, when wheat, corn and oats are the main staples, the following one would be found excellent :

First Year—wheat.
Second Year—corn and roots, or oats.
Third Year—oats, or corn and roots.
Fourth Year—wheat, sown with clover or timothy or both.
Fifth Year—hay.
Sixth Year—pasture.

According to this system, there would be every year, two fields of wheat, one field of corn and roots, one field of oats, one field of hay, and one field of pasture. Supposing the quantity of land under the plow to be 120 acres, there would continually be 80 acres of it in crops, and 40 acres in hay and pasture ; and if we suppose further, each field to be well manured when in grass, the whole farm, or 120 acres of it, would be manured once in six years, which as far as my experience goes, would keep it in good heart, and capable of satisfying all reasonable conditions. In its turn, every field should receive thirty loads of well rotted compost to the acre ; there must be no sham about this matter, as there often is. "Be generous to your soil," was the maxim of a good New York farmer, to the observance of which he attributes his own success in farming.

MANUFACTURE AND APPLICATION OF MANURE.

Though rotation may teach the farmer to diversify his crops, and to give his land occasional seasons of rest, it cannot give back to it those substances which the growth of the different crops is continually abstracting from it. Manuring, therefore, becomes a subject of prime importance to the farmer, and ought to lead him diligently to the consideration of the best means of converting all the straw and refuse of the farm into suitable matter for the nourishment of his fields.

MANUFACTURE OF MANURE.—Three methods of making manure may be mentioned. The first is that which is so much in vogue among western farmers, as any one may see who travels through the country in the fall of the year; it may be termed the negation method, and those who practice it must not be surprised if it should ultimately produce negative results; it consists in burning the straw, or in leaving it in huge heaps in the lots, there to be slowly decomposed by the elements. This practice is so slovenly and barbarous, and so unworthy of an American farmer of the nineteenth century, that I notice it to pass upon it the bann of severe condemnation. Would that the farmer believed one truth—that, while it is easy, by the application of proper means, to keep land at its ordinary or natural range of fertility, the process of renovating worn-out soil is difficult, tedious, and expensive. The second is to make the straw into manure, by feeding and littering the animals plentifully with it; this is a good practical method, and will always give good results. According to the third method, all the animal excrements, with other refuse matter, are thrown into a large tank, and there, by the application of water, digested into liqmid manure, which is thence conveyed into the different fields by means of pipes, laid in the ground for that purpose. It is by following this plan that Mr. Mechi, on a naturally poor farm, is enabled to raise those big crops, that so perfectly astonish the old English farmers. But this system is very expensive, and probably would not answer for the West at present; nevertheless, when the millenium of farming shall come, it is the one that will be universally adopted.

APPLICATION OF MANURE.—Should the manure be applied to the grass, or to the crops; and in what manner, and at what time must it be applied to either? These are important inquiries, and in answering them the farmer ought to consider, not what is best for individual crops, or particular fields, but what is best for the general welfare of the whole farm. Guided by this rule, I have no hesitation in saying that the grass land should receive all the manure, for the manure will quicken the

growth of the grass, which in turn, will draw largely upon the atmosphere for its sustenance. We thus secure the aid of a powerful auxiliary, which were the manure applied directly to the crops, we should not secure, or not secure to the same extent. If a piece of sealing-wax be exposed to the action of hot iron, it will gradually disappear through evaporation, which shows that manure should not be handled in warm weather, and not only that, but that it should be protected by sheds from the action of the sun; for the same agency that abstracts moisture from the land, and from the ocean, will also absorb the valuable qualities of the dung-heap. It appears, therefore, that the proper time for the applying of manure, is the month of October; if delayed much longer than that, it can neither be plowed in, nor spread on the ground. Many farmers are in the habit of drawing out their manure in the fall, and leaving it to be spread the following spring; but this plan, though somewhat good, is liable to objection, inasmuch, as the loss from soakage must be considerable, and were this the only loss, one object of manuring would thereby be partially frustrated, which is, to fertilize uniformly the whole field, and not particular spots of it. The generality of farmers, either from blind belief in the inexhaustable richness of their land, or from indolence which shrinks from exertion, do not appreciate manuring as they ought, and do not practice it as they should; but they had better take warning, that unless they will soon change their creed, and alter their conduct, the time will arrive when their broken down farms shall stop payment, and their owners become bankrupt; for the laws of nature will not bend from their course to satisfy the whim or negligence of man.

But, though the farmer's main reliance for manure must be upon his own yard, yet he may, with advantage, apply to his land more specific fertilizers, such as plaster, lime and guano. We are, perhaps, too distant from the sea-board, to profitably use the latter article, to say nothing of the difficulty of obtaining it pure. *Lime* might be applied to advantage on some of our wheat-lands. Such is the value attached to it by the

Scotch farmers, that they often draw it from a distance of 20 or 30 miles, and give it to their land at the rate of 200 or 300 bushels to the acre. A convenient way of using lime, would be to haul it home from the kiln in winter time, and put it under cover till spring, when, after the ground was plowed, but before sowing, it could be applied, by means of a lime-spreader. The virtue of plaster is too well known to need confirmation; on grass-lands, it is especially beneficial, but as it is more of a stimulus than a nourisher, the best way to use it is in conjunction with a slight coat of manure.

CONCLUSION.

It may be that this Essay cannot be better concluded, than by simply enumerating some of the qualities and resources, which a farmer must possess, before he can be a competent manager of his own affairs.

INDUSTRY, PERSEVERANCE AND FRUGALITY.—These are old virtues; but they have, from practice or neglect lost none of their ancient worth, for moral principles cannot, like machines, be superseded by fresh inventions. The affairs of the world, of which private pursuits are but parts, can no more be carried on without them now, than they could a thousand years ago. It is as true at present that "the hand of the diligent maketh rich," as it was in the time of Solomon. There is indeed a strong tendency to depreciate these qualities, and disregard the practice of them, as though they could be safely neglected, or adequately supplied by others; but the farmer must clear his head of this delusion, if he expects to manage his matters discreetly, and make headway in the world.

CAPITAL.—Neither war nor commerce, nor anything else can be carried on without money; yet a great many appear to think that farming can, forgetting that no profit can be expected, when no capital has been invested. Many attempt to supply the lack of capital by credit, but it is a dangerous business, and generally results in ruin. A farmer should never invest more

than a part of his money in land, as he will need the rest to carry on his business.

A Good Wife.—In any sphere of life, woman is necessary to man, but she is particularly so on a farm. For a bachelor to think of becoming rich and happy on a farm, is a gross delusion. If he should live alone, like a hermit, he must fare like a savage, and work like a slave; while on the other hand, if he keeps round him a set of hired persons, the most that can be expected of them is, that they will look after his affairs just as far as it suits their interest and convenience.

Keeping clear of debt and speculation.—These two evils can be named together, as they are often found in company. There is nothing that tends more to weaken a man's energy, and to demoralize his nature, than to be continually in debt; he can hardly feel himself a free agent, for being always under the lash of compulsion, he can have no option. So far from being in debt, the farmer should always have a floating capital of $1,000, that he may buy at the cheapest rates, and sell for the highest price. Most farmers, when they have a little, instead of keeping it for a contingent fund, for the more vigorous and scientific prosecution of their business, prefer to loan it out, or what is worse, to risk it in speculation, by which they are crippled in their means, and not unfrequently ruined in their fortunes.

Order.—This is as necessary on a farm, as in the camp, or in the manufactory, for without it, nothing can be done at the right time, and in the right manner. The observance of order will exclude all tumult and confusion, and enable the manager to carry on his operations in a simple and pleasant manner.

Prudence and Sagacity.—Some farmers act as if they had no calculations, or having them, had no confidence in them while others spend extravagantly, as if literally, they had "no thought of the morrow;" hence the necessity for the forming of wise plans, and of prudence for the conduct of life.

PROMPTNESS.—Every farmer should be a prompt man, prompt in the discharge of his business, and particularly prompt in meeting his pecuniary engagements. Yet merchants, editors, and business men generally, complain loudly of farmers in this respect, and I am afraid, with some justice. It is plain that they stand in their own light, in this matter; they certainly diminish their credit, besides embarrassing the business of the country by dilatory conduct in this respect, while their gain in holding on to their grain is always doubtful. But their lack of good faith appears to result, not so much from dishonesty, as from the want of good business habits; their creditors fare no worse than do their fields and animals at home. It is probable that the majority of farmers do not practice book keeping to much extent, hence their imperfect knowledge of their expenses and their liabilities, of their gains and their losses. Did the farmers establish for themselves a firm reputation for integrity and punctuality, it would be much to their advantage, as they would find no difficulty, in case of need, in obtaining temporary loans, or accommodation at the banks.

DELIGHT IN FARMING.—No man can prosecute any business to much advantage unless he likes it, even if he has a natural capacity for it, for his not delighting in it, will prevent the development of that capacity. Between a farmer who loves his business, and one that does not, there must be a striking difference, visible chiefly in their operations, and in the results that attend them.

But let us, in imagination, picture the perfect farmer, the man who loves his occupation, and is conversant with all its parts. He is upright in his transactions, and enterprising in his operations. His undertakings so generally succeed, that he becomes the object of envy, or of admiration, and men begin to call him lucky. He is not excessively elated by success nor inordinately depressed by misfortune. Poor crops and low markets affect him not, for they are elements, which from his intimate acquaintance with his business, and with the nature of

things, have entered into his calculation. He is a large reader of agricultural periodicals, and agricultural books, and is a progenitor, and often the founder of farmers' clubs, and of town and county fairs. Though his object is to be useful and happy rather than powerful and wealthy, yet he finds himself insensibly becoming the most influential man in his neighborhood, and, like Abraham, getting "very rich in cattle, in silver and in gold." He deduces his practice from science, and helps his experience by analysis; and mitigates the severity of labor by mental recreation. After growing hoary in his profession, he dies, bequeathing to his children a rich inheritance, and leaving a name, as worthy of celebration as *Pope's Man of Ross*.

FRUIT CULTURE IN WISCONSIN.

The Essay to which a Premium of $25 was awarded by the Ex. Committee, Dec. 20th, 1859.

BY O. S. WILLEY, OF JANESVILLE.

The first consideration with every one, in planting an orchard, should be, whether the soil and exposure are adapted to its necessities.

ASPECT.—Where a choice of position can be gained, I would always choose a *northern aspect*, (except for small fruits). Let it be high, dry, and airy; ravines and sunny hill-sides are to be avoided, the reasons for which are obvious to many who have observed the difference in commencement of growth, and frequency of late spring frosts.

Upon a northern declivity, of not more than twenty degrees, I have found from four to six days difference in time of leafing, other things being equal, as compared with level surfaces; besides, declivities give the best kind of *surface drainage*—a consideration of great importance, as saving the expense of underdraining, which would otherwise be imperatively necessary—particularly in very wet seasons, such as 1858, when a cold wet spring was followed by a succession of heavy rains in June, and the earth was kept nearly to the freezing point by night, and the atmosphere warmed to nearly 100° by day, thus producing a difference of fifty to seventy degrees between earth and air, or the tops and roots of trees. Perfect drainage obviates this very undesirable condition of things.

I would not say that expensive *under*-drainage is absolutely necessary to the growth of fruit, but in this country of uncertainties, and on much of our level prairie where a clay subsoil overlies the gravel, it is very much to be desired; though as

much depends upon a proper preparation of the soil, and after care, as anything else.

Soils differ so much in their component parts, that no special manures, in quantity, can be named as applicable,—for besides the universal constituents of loam, clay, sand, &c., others, in greater proportions than are found in these, are necessary to the promotion of a healthy growth.

THE APPLE.

Dr. Emmons has furnished an analysis of the apple tree, which shows the per cent. of some of the most important elements, in the ash of bark and wood, to be as follows:

	Bark.	*Sap Wood.*
Potash,	5 parts	16 parts
Lime,	51..do	19 do.
Phosphate of Lime,	3..do	17 do.

The large amount of lime found in the bark and wood of trees, makes it evident that more is needed than is usually found in western soils; air-slacked lime from lime-kilns may be used beneficially; also leached ashes, or wood ashes in any form will supply the deficiency in a great measure. Definite quantities cannot be named, as circumstances of position—whether timber or prairie—and natural conditions of soils will alter cases.

As a rule, one peck each of the lime and ashes, to be spread evenly over the surface as far as the roots extend, and to be renewed every three or four years, and *to be hoed in after a deep and thorough pulverization*, before the first application, will be definite enough for practice. Have applied more with great success. All strong, stimulating manures must be withheld, unless the soil is *very* gravelly or sandy, and even on such must be used in moderate quantities, as they are liable to occasion a too rapid growth.

Selection of Trees.—In the selection of trees there should be much care and caution used in their form as well as variety. The comparatively few properly grown nursery apple-trees in

the West, makes this precaution doubly necessary. Not until persons are willing to pay nurserymen remunerative prices for growing apple-trees as they should be, can we expect to get them; and not until we have proven to ourselves, by experience, that none but trees properly grown will succeed, will we be willing to pay satisfactory prices for a good article. First, see that you are not buying diseased trees, and know, if possible, that they are from a wholesome stock; which may be told by even a partially experienced eye. If the bark is rough and scaly, and the tree made but a few inches of growth the previous year, look sharp for the bark-louse, which is brown, of a scale-like character, and a tenth of an inch long. They adhere nearly as firmly to the bark as though they were part and parcel of the tree; and it is next to useless to attempt to rid a tree of the depredators, after they have once taken possession of it.

A thorough scraping of the tree's body-surface, followed by a wash of strong ley, has its effects; but with the utmost care, some will escape unharmed. The best remedy, and the only one really satisfactory, is to cut the trees down, and burn them upon their first appearance, ere they spread to neighboring trees.

With care such trees can be avoided by purchasers, but lice are sometimes found upon orchards, hence the remedy is applicable. Also, be cautious against buying black-hearted trees. If the tree has a fair form, look well to the inner parts—use your knife freely in the nursery—better to cut a half dozen to your heart's content, and pay for them, though you go away with none, than to plant an orchard of diseased trees. Likewise, discard such as are "tall and spindling"—mere whips. Don't compare the price with the *lighth* of the tree. See that it has had plenty of room to grow and spread its top, and is not "drawn up," as green-house men say.

Many are scoffing at cultivated trees, and will have none but seedlings. I would say to all such, that they are not necessarily any more hardy than the first named, as there may be from

a quart of seed as many trees produced constitutionally tender, as the reverse. The mere fact of having a graft inserted at the crown of the root, or two inches below the surface of the ground, does not destroy the hardiness of a once hardy stock.

A well proportioned apple tree should have its head formed low, about two feet from the ground—body thick and stocky, limbs deverging and upright, healthy, well-ripened growth. The whole tree to present a "bright and shining" surface. The purchaser must bear in mind that there is much difference in varieties of apple trees of the same age, for while a Sops of Wine, or Northern Spy, adapts itself naturally to the pyramid, and just to the fancy, the Jonathans and Golden Russet, are more spreading and often straggling. A judicious use of the knife, greatly enhances the beauty of such trees. It is

Fig. 1.

Fig. 2.

observed that apple trees of this form, (Fig. 1,) present but little body surface to be scorched by the sun or blighted by the piercing winds and cold, which is the reverse with those having long stems, (Fig. 2.) which are usually covered with half attached, shaggy bark, caused by a too great exposure to the intense rays of the sun; and as the tree increases in age and size, its hard, scaly shell becomes more shaggy. The insects take "note" of the opportunity, deposit their eggs, and

unless the tree has an unusually vigorous and hardy constitution, it will have a feeble struggle for a year or two, then die. Trees trained with low heads, have no stems to become diseased, or at least so short an one, that the top forms a shade for it, and the roots avoid in a measure the extremes of temperature in both. Thus shaded, the roots will escape the drouth, and also escape the quickening influences of late, warm rains which induce a fall or second growth; for the ground once cooled sufficiently to check the flow of sap, the rightly formed top will protect the top by its shade, from being again brought into action.

The low headed tree will assume an upright, pyramidal shape, when the same variety, trimmed some feet up from the ground, will take the deverging, and often very spreading and drooping form, much to the annoyance of the plow boy.

Varieties.—Having satisfied yourself of the character of the trees in health and shape, the next requisite is varieties, which must be selected with much caution and experience, based upon actual observation in the immediate, or a similar situation. There is but little use in consulting the books or catalogues of Eastern fruit-men; what has been satisfactory there, often proves worthless at the West. So far as possible, le your varieties be those that were orginated at the North—the first consideration being *hardiness;* second, quality of fruit; and third, the combining of both, so far as possible.

Do not be anxious to get a great many varieties; it only produces confusion in your own nomenclature. Better to have a few distinct, well-tried varieties, selected upon your own judgment—never, however, discarding the honest counsellings of those who make fruit-growing a business.

So far as my observation and experience have gone, the following are adapted to general cultivation:

Summer Varieties.—Early Joe, Golden Sweet, Red Astracan, Sops of Wine.

Autumn Varieties.—Duchess of Marlborough, Autumn Strawberry, St. Lawrence.

Winter Varieties.—Colverts, Fameuse or Snow, Golden Russet, (of New York), Green Sweet, Jonathan, Newtown Spitzenburg, Pomme Grise, Roxbury Russet, Talman's Sweeting, Winter Swaar, Yellow Belleflower.

Taking up.—Having made your choice among *home nurserymen*, as soon as the ground is in suitable working order, proceed to the nursery, with spade in hand; dig, or at least oversee the digging of every tree, yourself. The younger the trees you select, (though three years old from the graft, for apples, is considered the best age) the less will be the loss of roots compared to the top. In digging, place the spade edgewise to the tree, and a proper distance therefrom, *lifting out* each spade of dirt, as you proceed *around* the tree, thus loosening the extremities of the rootlets, and cutting but few off; then work under it with care until it may be easily lifted out, and your tree is well taken up.

Protect the roots and tops, if possible, from the sun and winds, (as it has been proven that two hours sun will kill the fibres of most species of trees,) by matting, or carry within the packing house till shipment, which should be done immediately; and *no tree should be carried, for a few hours' ride, even*, without having its roots *sacked* and well *dampened*.

Planting out.—In digging holes for planting the trees, unless the ground is thoroughly under-drained, or sub-soiled, do not dig them deep, but broad—say four feet by one—since water will always accumulate in the basin thus formed, if deep, besides giving the roots a tendency downwards to uncongenial soil and temperature. It is a mistaken idea, that by planting deep, the apple tree will escape the drought of summer, or the frost of winter, and so "must live." It is essential that the roots have light and air, and if buried too deep, they cannot receive them. If a portion wish food from different soils and minerals, they will much more easily penetrate their downward course, than the first will turn theirs upwards.

The object aimed at, must be to keep the roots as near the

surface as possible, for protection from the cold. (See page —.) Cut smoothly all bruised or broken roots—remove all that may cross or crowd one another—place the tree in the hole previously prepared, which must now be filled up with surface dirt so as to admit the tree, as nearly as possible, to the depth it previously had in the nursery. Place the roots in their natural position, and as the hole is being filled, see well to the fibres ; fill every crevice with soil, raising the roots as you proceed, to a point at right angles with their base, thus proceeding till the hole is filled ; hen gently tread the surface, afterwards refilling, and leaving the surface, finally, loose and mellow to freely receive the moisture of dews, rains, &c. In this manner the whole number are to be planted. The next step is to review them, with knife in hand, and a "deal of courage." Don't be afraid of hurting them, or wounding any one's feelings, but "face about" to the tree from every side ; thin the top well ; cut out every limb that crosses or rubs its neighbor.—Again review the tree and give it another trimming ; then as a finality, cut back one-third of thelast year's growth of every limb—reference being had to the future pyramidal shape of the tree—leaving, as a rule, a bud upon the upper surface of the limb, placing the knife opposite its lower portion, and cutting smoothly and slopingly to the bud's upper point.

The reasons for so severe pruning the first season are, that it is hardly possible to expect a tree to retain near all its roots in the removing process, and a reduction in number cannot support the whole original top in a healthy, thriving condition, and therefore, the demand upon the roots must be diminished proportionately, by thinning, or cutting back, or both. Better to have less top in the spring at planting and a fourfold season's growth, than a dead, or sickly, half-starved tree in the fall.

If the orchard is planted upon the prairie, or where it will have no protection from the winds, it will be found very necessary that the trees be well staked; which should be done at the time of planting them; the stake being driven perpendicularly before the hole is wholly filled, to avoid mutilating any roots.

Wind well with straw or cloth matting, where the tree is to be bound, in one or two places, to promote an upright growth. A very wrong idea exists about watering newly planted trees. Many suppose that a tree cannot live unless its roots are water soaked three or four times a week; while they give no attention to the top, though the atmosphere be ever so dry. It is seldom necessary to water trees after they are once well planted. If at the time of planting, the ground is very dry, use half a pail of water to each tree, pouring it in with a watering pot, as the fine soil is being placed around the fibres; thus moistened the earth will adhere firmly to them, and if each tree is then, as it should be, thoroughly mulched with straw, coarse litter, or, what is better, half rotted chip manure, the per cent. of death by drouth will be found very small, and you avoid the necessity of watering.

Cultivation.—The fruit cultivator having purchased his trees and planted them with the best of care, using every improvement which modern skill could devise, must not think his task is done. He must know, as he will by experience, that it is the "labor of love" for the things that perish; that it is the after-care for *years* to come, which tells in the orchard. If the cultivation of the soil is neglected, or its strength exhausted by unsuitable crops, or its fertility used in sustaining a crop of weeds and grass; or again if the orchard is to be used as a sheep pasture, and the trees for fly-brushes, then he need not wonder if his hopes are blasted and Wisconsin prove a very poor fruit country. But if, on the other hand, he studies the nature of the soil, the natural wants and demands of the trees, he will refrain from growing crops of small grain on the land, knowing that they will absorb nearly all the moisture of dews and rains in the early part of the season; and ripening at midsummer, they are removed just as the body and roots most need protection from the sun.

The crops best suited to an orchard, are potatoes, beans, turnips, corn, and all hoed crops; anything which requires the frequent stirring of the soil is found beneficial.

Noxious Insects.—Next in importance to the cultivation of the soil, is the protection of fruit trees from the insect pests, of which no country is more prolific than the Northwest.

The Borer (*Saperda bivittata*) has already made its appearance in many orchards: the only remedy for them is to thoroughly "purge" their holes with wire. Their depredations in healthy trees are near the surface of the ground; but those partially killed or barked by carelessness, afford them convenient resting places, so that they enter the tree and perforate it in every direction, ejecting dust from their numerous small holes which are no larger than shot. Several solutions, such as tobacco water, soap, sulphur, &c., mixed properly, have been applied, with but little success. The orchardist must closely watch his trees in early spring and summer, when, if seen in time, the insect is easily cut out, and will be but little damage to the tree, or, if left till further advanced may be punched to death with a sharp wire.

The Caterpillar (*Clisiocampa Americana*) is, perhaps, the most serious enemy we have to contend with. They hatch about the time of the tree's leafing, and increase in size at a rapid rate. Living upon the young and tender leaves, they often prove a great drawback to young orchards. They are however easily destroyed if taken in time. The nest, containing their eggs, can be seen in early spring, in rings, upon the smaller branches. This is the most effectual time for destroying them—while they are unhatched and in their nests, by simply cutting off the young branch which bears them and burning it: it is never detrimental to the tree, as they are not far from the extremities of the limbs. If neglected at this time, as the next best plan, on a cloudy morning, as soon as convenient after they have spun their cocoons,—as they never leave them until warmed and dried by the sun,—tear out their nests with a stick and crush them; or saturate a sponge with spirits of ammonia and turn it about among them.

The bark-louse has already been noticed on page 329.

Pruning must be looked upon with much interest, and never be forgotten; for it may be done at any time, and all the time.

Whenever a limb is taking a wrong course—a bud starting where it is readily seen it will mar the beauty of the tree, or destroy the proper balance, they should be cut out with a sharp knife. While the limbs, or perhaps mere buds, are so small, and the tree thrifty, the very small wounds made will soon heal over, with no detriment to the tree's growth. If not done till the coming season, or even thereafter, too much care cannot be used in removing the large limbs with a fine saw, and afterwards paring smoothly with a sharp knife, and applying a coating of grafting wax, or thick paint; even clay will adhere, and is much better than nothing. This pruning of large limbs must be done early in the season; and, if before the most rapid flow of the sap, all the better. If coated, as advised, the wound will heal over much sooner than if done later. I have also found it advisable to examine all fruit trees early in June—scrape off moss, if any, and give a thorough washing with soapsuds, thus removing all lodging places for insects, renovating the bark, and giving it a clear and healthy appearance. Trees thus managed remain healthy a long time, and are an honor to the orchardist and to the country.

THE PEAR

Has been the "favorite fruit of modern times," and but a few years since promised much to the orchardist throughout the West. But the ignorance attending its cultivation, as well as selection of varieties adapted to different stocks, and to our climate, has made it a disheartening enterprise.

The remarks on selections of orchard sites, properly include the pear, plum and cherry. The soil best suited to the pear is a sandy, gravelly loam, so situated that the surface water readily drains off. The under-drainage must also be good, as no pear tree will live a long life in a healthy condition, with *wet feet*. A cheap and convenient way of underdraining for the pear, is to dig the holes for the tree well into the gravel, passing through the loams, clay, &c., then fill up to within twelve or fifteen inches of the surface with quarry rubbish, or

other coarse gravel, and upon this fill six or eight inches of good garden loam, when the tree may be planted, following the directions, in every respect, as given for planting the apple—trees to be set twelve feet apart each way.

As potash and lime enter largely into the composition of the bark and wood of the pear tree, it is found beneficial to apply wood ashes in any form; spread evenly upon the surface and work it in. The pear tree should be planted cautiously by the western farmer, and those who are unwilling to spend some time, each season for their well being, had better let them alone.—For general cultivation, I find that the pear worked upon the pear root is best. It may be brought into bearing much sooner by annually cutting back one-third of the current year's growth the first of August. This, besides checking its growth and ripening its wood for winter, will be about all the pruning it will require. For gardens and amateur cultivation, the pear upon quince roots may be planted—eight feet either way—and with close attention and high cultivation, has given satisfaction. The soil must be deep and rich, of a sandy nature, and there must be plenty of well decomposed stable manure, mixed with lime and ashes. The tree selected for planting should be two years old, and worked as near the ground as possible, so that in planting the union may be covered, and still retain quince roots near the surface, as that is their natural position. In addition to the August pruning, cut back another third in the spring, before the buds open. For winter protection (and this applies to all large fruits) raise a mound two feet high, of dirt, around the tree in the fall, which may be leveled back in Spring, upon the opening of the buds, but the later it is left without injury to the tree, the better. Many use manure to be spread upon the land in the spring, and left as a mulching upon the surface. Where mice are not troublesome, it answers every purpose of the dirt.

Varieties.—The Bartlett, the Louise Bonne de Jersey, Swan's Orange, and the White Doyenne are the best standard

varieties. Of Dwarfs, I prefer the Bartlett, the White Doyenne, and the Seckel.

THE PLUM.

The Plum, in its wild nativity, is found in almost every variety of soil in the West, and though certain constituents are requisite in the soil, for the healthy growth of timber, I have not yet observed any difference between the gravelly and clay, loams and the virgin prairie soil, as adapted to the growth of the plum tree. I would say, select trees in the nursery, two years old, and well forward, and plant in any well drained soil, in early spring. The distance apart will vary with varieties somewhat, but, for most kinds, fifteen feet is far enough. The wild plum of the forest may be planted in the orchard, being easily moved, and very tenacious of life; and after one season's growth, can be top-grafted. It will usually fruit the second season thereafter. This method has its objections, the principal one being that the scion will out-grow the wild stock, and, in a few years, break off. But the earliness of their fruiting does, in a great measure, recompense for this.

Prune the roots as directed for the apple, and plant with the same care. The top should be pruned into a round, open head, and in August the terminal bud of the new growth pinched off, that it may ripen and harden its wood for winter. The list of varieties under cultivation in the West, and worthy our attention, is large, the plum being second to none other fruit in adaptability to our prairie soils.

The Curculio is the plum's worst enemy, and, in the West, its principal one. Many plans have been devised for its riddance. The best and surest is to give each tree a sudden jar in the early morning, previously spreading a sheet under the tree; thus gathering the fallen fruit and insects, which are easily destroyed.

Varieties.—Among the best for our climate are, Bleeker's Gage, the Damson, the Green Gage, the Lombard, the Red Diaper, Smith's Orleans, and the Washington.

THE CHERRY.

The Cherry has found but little favor among fruit growers of the West. The extreme tenderness of the sweet varieties, has rendered their cultivation next to a total failure. A variety of the English Red Pie Cherry, suitable for culinary purposes and wine, succeeds well in all soils, and one or two varieties of the Morelloes and Dukes, worked upon the Mahaleb stock, receiving garden cultivation, have done very well. The cherry is adapted to but few and limited latitudes, and is not the fruit for the world. The prairie farmers must plant with care. Mazzard roots, commonly used for stocks to work upon at the East, are wholly unfit for prairie soils, until we adopt and practice a more effectual mode of drainage. No fruit tree is more sensitive and impatient of water than this, (the roots being soft and spongy), and none will suffer more from late spring frosts, after the buds are swelling; therefore the greatest caution is necessary in planting that the exposure be such as will afford good drainage, and naturally prevent the too early starting of the buds.

Trees may be set fifteen feet apart, and in addition to the winter mound protection, wind the body with a straw rope, such as a foreigner only knows how to make.

The orchardist who has done this much with the standard fruits, must not "bask in the noon-day sun," and think his task is finished. Quite too many have done so; and having selected the best of sites, prepared the ground with much pains, and planted the choicest fruits, have then left them to the cold, bleak winds, uncared for and unprotected, till of the thousands of trees annually planted, nine tenths come to an untimely end. The careful orchardist will not only sufficiently protect his fruit trees from the depredations of cattle, but will also provide wind-breakers, by surrounding his orchard with some of the fast-growing forest trees, as soft maple, cottonwood, poplars, basswood, elms, &c., and then, outside of all, plant a hedge of buck-thorn, which has proven hardy in this vicinity during the last ten years, and which, (though it does not come

within the limits prescribed for this essay,) must be cut back twice each year, for three years, in order to make a good "live fence." We look upon live fences, and a belt of forest trees surrounding the orchard, as an essential requisite to successful fruit culture.

SMALL FRUITS.

What has been said thus far upon the selection of site, cultivation, and pruning, is only applicable to the large or orchard fruits, and does not apply in general, to those designated as garden or small fruits; though these are as essential to the well-being of every farmer, and even more so.

THE GRAPE.

Native varieties will succeed, to a greater or less degree in any garden soil with plenty of sun; and though "what is worth doing at all, is worth doing well," none need be restricted from planting plentifully of the vine, if they have not their ground trenched, under-drained, or a steep south hill-side, terraced, to grow their vines upon.

I have advised that the large fruits be planted upon a north or north-eastern aspect, for reasons assigned. The reverse of this is true of all "small fruits." Not because they are able to withstand the effects of a winter's sun, or are proof positive against the late spring frosts, (for no fruits are more sensitive than some of these, to the action of the heat and cold) but we select a south or south-easterly aspect, because we gain a greater degree of heat through the summer months, and thus hasten the ripening process.

In planting grapes it must be remembered that they love plenty of sun, and a free circulation of air; and here is where many err in planting their vines upon the south side of a building, and training them directly against it. This gives plenty of heat, with little or no free circulation of air; whereas, by planting six or eight feet from the wall, and training upright to a trellis, both objects will be attained. Another excellent site is

upon the east side of a tight and high board fence, keeping a few feet distant. In this manner we secure the full benefit of the early morning sun, and avoid the heavy west winds by protection with the fence. In making a selection of site for vines it may not always be possible to have it just to our liking; if it is, select an elevated piece of ground with a south-easterly aspect, broken from the west and north-west winds by hills or timber in the distance. If the planting is upon a smaller scale, and more convenient, there is no better way than to plant as directed, by the fence. I have never failed to ripen my crop of Isabellas upon vines planted without protection upon the level prairies, which situation is most frequently found among the western farmers. The grape loves a deep and well pulverized soil, worked two spades deep, during the fall preceding the planting—there being incorporated with the soil, at that time, a good quantity of well decomposed manure and wood ashes. The best time for planting is in early spring, as as soon as the ground is light and mellow; for, if done while wet, it is apt to bake, thereby stunting the young plants, which may require years to recover. Fall planting is often successful, but the severities of our winters are against the practice.—When done, the young vines must be covered entirely over with the soil, for protection, to be removed the next spring.

Selection and Preparation of Vines.—The vines are now to be selected, and there is much difference of opinion existing as to the most suitable age. With vines grown the usual way, viz: by cuttings consisting of two or three buds, all of which will give out roots, and after the first year extend for a long distance into the soil, I find that the most successful plants are those but one year old; as, with them, the root is all obtained.

Another mode of propagation, and much to be preferred, is by single eyes. Take an eye and plunge it into a prepared compost: it will readily root, all the roots issuing from one point, which can be easily and evenly spread near the surface in planting, and in much less time than is required in digging the large and deep holes for those grown from layers or cut-

tings. Select, if possible, a moist or cloudy day for removing the vines from the nurseries, as their young roots are extremely sensitive to the effects of the sun, and immediately after digging cover with sacking and keep moist till planting. Before planting, examine the vines and cut out all bruised or mangled roots, and cut the top back to two or three good, plump buds. This may seem barbarous, and look like never having fruit, but it is necessary to the healthy and rapid growth of the vines.

PLANT six feet apart, either way, and fill in with any good garden compost, not forgetting to have it rich with *well rotted* manure. Green or unfermented manure must *not* be used. During the remainder of the season little more is necessary than to keep the ground free from weeds and grass for some distance around the plants. By the middle of August, pinch off the the ends of all the young wood, in order to check its growth and help the ripening process. The last of October the vines should be again examined, and cut back to three eyes or buds, and these should be well covered with coarse manure that will not ferment; or—what I practice and think much better—the natural soil should be thrown upon the vines two or three inches deep. Covered in this manner, they winter perfectly sound, and mice never injure them; which they will sometimes do, if covered with litter.

The next spring, as vegetation starts, examine a portion of your vines, and when the buds are well swollen, or liable to be damaged by being longer covered, remove the soil, litter, &c., to its place with the spade or three-tined spreading fork. Loosen the earth six or eight inches deep, and as many feet around the vine, and at the same time work in a coating of one or two inches of wood ashes, spread upon the surface.

As the vines advance in growth, keep them supported upon temporary stakes, and pinch off all laterals, (small side shoots, issuing from the base of the leaves); and if the three buds left at the last pruning all start to grow, rub off the weakest one. By the middle of August the other two canes will have extended about eight feet, when, pinch off the ends of them, and let

the laterals grow; otherwise, in a rich soil, checking the main growth too suddenly it would "push" a second one. Keep the ground free from weeds with the hoe or cultivator. In the fall, as in the preceding year, the vines are to be again covered; at this time cut off the laterals formed since the principal cane was pinched, which must also be cut back about two feet. Many cut the vine back again this year to two good eyes, and do not form the fruit cane until the next season, (the third year), but if the vines have done well, I find no difficulty in gaining one year. If the growth has been feeble, or in anywise stunted, I always cut it back in proportion. There is more virtue in a sharp knife, used judiciously upon the vine, than many are aware of. Having examined and pruned as directed, we have now two canes to each root planted, which we stretch upon the ground each way from the main stem,in line with the vines planted, and cover as before described.

A Trellis will be wanted the coming Spring, unless the vines are to be trained upon the single post, which, however, requires more care, and has not yet proved of any benefit over the common trellis—I speak with reference to this climate. The common method is to set posts, of any durable timber, between the vines, and one at each end of the row, and immediately in range with them; upon these, strips of inch board are nailed, one and a half inches wide, and fifteen inches apart, from the ground upward. No. eight wire, drawn from post to post, also makes a light and airy frame. A mode of trellis, or grape frame, which proved favorable for preserving the vines through the frost of June 4th, '59, though a little more expensive, has many advantages.

It consists of two posts set in the ground, either side of the vine, six feet apart, and one or two feet high, with pin holes near the tops for attaching the frame; which is made of two by four scantling, six feet long, with holes for the pins, so as to hinge it to the posts, and with cross bars, one by two inches embattened their thickness in the scantling. The whole frame may be tapering to three feet at the top, which is supported by

a moveable brace or post at any height required, and may be as easily changed from a horizontal position for covering up, to an upright position for sunning, as the blade of a knife may be opened and shut upon the handle. If the cross bars are alternately upon opposite sides of the upright pieces, the vines can be passed between them, needing no other support.

After the trellis is erected, the vines may be taken up—having been previously uncovered to avoid damaging—and attached thereto; and as we now consider them fully established, we may look hopefully for fruit. The weeds must be kept down as heretofore.

In June examine the vines, and pinch off those bearing fruit, three leaves beyond the last bunch of grapes set, and cut out all superfluous growth, so as to encourage the growth of fruit, that we may get as much size and maturity in the early part of the season as possible. The new growth through the whole season must be watched, and pinched back, otherwise it will become too exuberant and the fruit will not ripen.

In the fall, the vines are to receive another trimming. At this time cut the laterals back to one bud. Shorten in the principal canes to seven feet, and the new ones, which may have started from the base, but which must not increase more than one each year, and better if not so fast—to four feet. Lay the vines upon the ground and cover as previously described. The time for trimming the vine in the North-west is the fall, in preference to winter or spring, as when the vines are once covered for winter, they should remain so till put upon the trellis; and at this season, (April), the flow of sap is so great as to cause them to bleed, much to the detriment of the vine. If from neglect it is not done till spring, the wound may be covered with common bar soap, which will remain till it is healed or grown over.

The cultivation of our improved native vines is comparatively an easy thing. Yet many are ready to ask "why then so much routine in their culture, or of pruning and manuring?" 'Tis true, many are grown throughout the West with no apparent

care, and yet *often*, *not yearly*, produce a crop of grapes, but the size and flavor of such when compared with those receiving the whole support of the vine is very apparent. The greater convenience with which the vines are controlled, and the beauty of the trellis or arbor, which may be built in every conceivable manner to suit the fancy, all combine to favor the small amount of weekly labor, too often grudgingly bestowed upon the most wholesome and delicious fruits.

THE BEST VARIETIES are, the Clinton, the Concord, the Catawba, the Elsinburgh, and the Isabella.

THE CURRANT.

The Currant is emphatically the "poor man's" fruit, though I would not insinuate that it was not, therefore, the fruit for the farmer, but for the "million." Easily propagated from cuttings, layers or divisions of the roots; readily accommodating itself to all climates and soils; and even enduring all kinds of ill treatment, it is ever ready to gladden the heart of the husbandman in its various forms of use. The currant will *grow* in almost any situation; but to have it *thrive*, and come up to what is a standard of its excellence, it must not be planted along side of the fence, eventually to form a hedge row of weeds and grass, with no care in manuring or pruning, till the fruit is scarcely worth the gathering; but give it a deep and rich soil—no fear of making it *too* rich—in the open garden plat, where it will be accessible with the "spade and the hoe." Each spring the ground must be worked over, and a coating of well decomposed manure must be incorporated therewith. The spading fork is the best for this purpose, leaving ground loose and mellow and cutting off but few roots.

The time for planting the currant is early spring, though it matures its growth early in the season and may be moved early in October, and planted upon land not liable to heave, by action of the frost, the coming winter. The proper distance for planting is three feet by four, for garden cultivation—a great improvement over the old method of setting them in a long row

through the garden, thus giving the wind, from every conceivable direction, access to blossoms and fruit. Plants set in a square plat protect one another from the wind and in a measure from the sun. I find that those receiving the morning and evening sun, and shaded from the full noon-day heat, are much larger than otherwise. The heat drawn by the black prairie soils is not beneficial, and to avoid this and obtain the best fruit, they must be well mulched. Two or three inches deep of coarse stable manure, spread evenly over the surface, is not too much, applied immediately after the ground is spaded over in the spring; this, in turn, will be subsequently decomposed and may be forked in the coming spring.

The fruit is borne upon wood of the previous year's growth, and I find that by cutting out at least one-half of the old wood each fall, it adds much to the vigor of the plants and size of the fruit, as well as prevents the thick matting of the bush.

The best age of bushes selected for planting from the nursery, is as a rule, three year's growth from the cutting. With plants of this age, the whole root may be obtained, which is not the case with those of a bearing size; these will have to be thinned out, and cut back to encourage a new and vigorous growth, as the fruit will be very small and inferior, until produced upon such.

VARIETIES.—The best are the Cherry Currant, the Dutch Red, Dutch White, Black Naples, Victoria, and White Grape.

THE STRAWBERRY.

The Strawberry has not yet received the attention in the North-west which its merits demand. The earliest of the summer fruits, and one of the most wholesome, it should receive increased attention until found in every farmer's garden.—Doubtless injudicious selections of varieties, bad management in protecting the plants, or no protection at all, on the part of a few careless experimenters, have resulted in failures

which have discouraged others. The strawberry readily adapts itself to our climate, loving a deep and well pulverized soil, which must not be too retentive of water, as the plants will not thrive upon water-soaked premises; and at the same time no plant is more sensitive to the drouth. If the ground is not worked deep, the plants will not receive any moisture from underneath, and in a dry time, which the West is very subject to, the ground will be baked and cracked to the loss of both fruit and plants. The ground should be worked fifteen to eighteen inches deep in any good garden soil. Stimulating manures should be avoided. Lime and potash enter largely into the composition of the plants, and may be applied at any time by mixing with the soil, or as a top dressing.

The most convenient way of planting is in beds four feet wide. Two beds of this width and thirty-two feet long, will furnish all the berries an ordinary sized family can use. The plants should be set in early spring. Avoid summer or fall planting, (unless by negligence it is not done in spring) as the chances are then greater against their doing well; neither will they yield any more fruit the next season, than if set out six months later, (viz, April.) Having examined the vines and cut off all the dead portions attached about the roots, also the decayed and fully grown leaves, set the plants in rows two feet apart, and one foot from the edge of the bed, and one foot distant in the row. The bed being kept narrow makes it easier gathering the fruit, and more convenient cleaning the ground from weeds. Much care should be observed, especially in the early part of the season, not to break down the vines, by stepping upon them, or, as is the habit with some, kneeling upon them, while weeding or picking the fruit. Keep the ground free from weeds, and let the runners remain. By fall, the ground will be nearly covered with young plants, which will fruit abundantly the next season. A few imperfect berries are frequently found the first year. As cold weather approaches, cover the beds with straw from the stack, so that it will be one or two inches deep, after setting. This covering is not applied

because of the absolute necessity for protection to the vines, to have them live, but because without it, the frost acting upon the vines in its heaving process on the soil, breaks or strains and loosens the roots of the plants, and so lessens in a great degree their fruitfulness.

Coarse litter taken from the stable door is often used, but it is to be avoided, as it contains much grass and foul weed seeds, that cannot be removed, and must germinate. I have seen fine beds of strawberries destroyed by using such litter for covering.

In spring, after the new leaves have started under the straw, remove all protection with a garden rake. Vines that did not have the covering removed at all in the spring of 1859, escaped the frost of June 4th, and bore a fine crop; while those adjoining and uncovered were destroyed. Pine sawdust is sometimes used, but not advisedly, as a mulch through the summer.

During the past summer, the fruit from a bed of Wilson's Albany was nearly lost, by the worms generating, or at least finding lodgment in the dust, and destroying the berries nearly as fast as they turned their color.

The vines will now require but little care, if kept clean the previous year, until after the fruiting season, and runners are again forming, which, if all are left to grow, at random, will so mat the bed, by another year, that the fruit will be inferior. A convenient and effectual way is, soon after the fruit is all gathered, and in a moist time, to take an iron tooth rake, or an iron tooth potato digger, and thoroughly drag the bed. In this way the weak and stunted runners are removed, the whole bed is well thinned, and the surface of the ground is slightly mellowed, giving the new runners a better opportunity of being well rooted for winter. I have adopted this plan and find it much better than trying to keep them in rows—spading alternate strips—or in hills, which is worse than all other methods.

If the bed is not well attended to, it will need renewing in another portion of the garden, as often as once in three years, and many slovenly-kept gardens will give but one crop; but

with proper care—and less each year than the first setting—a bed will continue its productiveness for several years.

Varieties.—Early Scarlet, hermaphrodite; Hovey's Seedling, pistillate; McAvoy's Superior, pistillate; Wilson's Albany, hermaphrodite. These are all well adapted to our climate and soil, and have no superiors for delicacy of flavor and prolificness of yield.

CHINESE AND AFRICAN SUGAR CANE.

An Essay read before the Executive Committee, at the Meeting in February, 1859.
[*See page* 225, *of this Vol.*]

BY J. G. KNAPP, OF MADISON.

At the meeting of the Executive Committee of the State Agricultural Society, in 1858, a premium list was made out for the best specimens of sugar and syrup manufactured in this State from the Sugar Cane. To render the competition as complete as possible, the Society gratuitously distributed some 10,000 packages of the seed of the Chinese Sugar Cane among the citizens of Wisconsin. From them and other seed already in the State, thousands of gallons of molasses have been produced, many families manufacturing nearly all their molasses for the present year. So much has been accomplished that it may be safely said that the growth of the Cane and its manufacture into sugar and molasses is now a fixed fact in this State.

Two very distinct varieties of the plant have been introduced into the United States—the Chinese Sorghum Saccharatum and the African Imphea Saccharata. The latter, scarcely known here, has been but slightly experimented with as yet, though it promises exceedingly well. The Chinese Cane on good corn land frequently reaches the hight of fifteen feet, and when exposed to strong winds and storms is inclined to fall down, in the hills. The plants produce seed panicles on a whisk but little inferior to broom corn, and but little more prolific in quantity of seeds. It is plainly the true Sugar Cane of Mauritas, reproduced from seeds by the laborious perseverence of the Chinaman, which while it retains the saccharine matters of its progenitors, has also become an annual plant, in our latitude.

The African Cane is more nearly akin to the dourah corn, which has been cultivated in the north of Africa from time immemorial, on account of its seeds, which have been used as food for man and beast. The heads are compact and yield a very large quantity of grain, scarcely darker than the seeds of the broom corn. The plants are seldom above eight feet in height, and the reeds are larger than the Chinese, and will seldom be blown down.

At the last meeting of the Executive Committee, a liberal premium list having been again provided for the competitors in the manufacture of this article, ($100 for the best sugar and machinery for its manufacture, the sugar to be made on the Fair Grounds), and the writer of this paper having been named on the Committee of Judges, I have deemed it best to give all the information I can to the farmers of the State, that if by chance, efforts worthy of the reward may be undertaken in time.

The first rude experiments have not always been successful. This might be expected, where men undertake to deal with an unknown substance. At first, all failed to convert the juice into sugar. Some even asserted that it contained none. The next mail brought the fact that the chemists had noted and analysed the juice of the ripe plants, and discovered no perceptible difference between it and the juice of the Southern Sugar Cane. They declared that it would make sugar, if the right method were pursued.

The prices paid for sugar, and the increased demand, caused, not more by the increased use, than by the settlement of the vast plains of Illinois, Wisconsin and Iowa, in which the sugar maple is almost an unknown tree, made men in those regions anxious enquirers after any and every means to get a supply of that necessary article, sugar. All inquired — all read. Some became almost maniacs, and went headlong into the culture of *Sorghum*. Money was spent in blind experiments, in which most failed to make sugar, or even molasses. Many were discouraged and left their crop to rot where it had grown.

Too late planting and an uncommonly hard frost in September last, in a great many cases, killed the plants before they ripened. But wherever it was planted early enough it has ripened its seeds, and probably there is now as much seed in the State as will be needed for next year's crop, though it may be unequally distributed. The efforts of the last year will be renewed, not only by the successful but by their neighbors. One successful man has made ten converts to his practice, though one half of those converts had themselves failed in their own experiments.

To save these truly valuable plants, *Sorghum* and *Imphee*, from disgrace and neglect, to aid those who are willing again to undertake its culture and manufacture into sugar, to make the whole profitable, it will be my endeavor in the several papers which I design furnishing to the *Wis. Farmer* during this Spring and Summer.

The great object to be sought in the cultivation of *Sorghum* and *Imphee*, is the juice contained in the stalks or reeds. This furnishes the important product of sugar identical with cane or muscavado sugar. Cane sugar is no more the sap of Sugar Cane, than the juice of the ripe apple is the sap of the apple tree, and it is not found in the plant when in an immature state. If the ripe cane be cut in two and examined with a magnifying glass, the crystals will be seen as distinct and white as double refined sugar. All experiments with immature cane have shown, that until the seeds of the plant are ripe, the juice only contains grape sugar and starch, and no cane sugar; while in every instance where the seeds have matured, the juice contains cane sugar, and no starch. From this the importance of ripening the plants will be apparent to all. Do not be afraid of Spring frosts.

The *Sorghum*, which has been cultivated in Wisconsin exclusively, requires a little more time from the planting of the seed, for full maturity than the dent corn. The seeds remain under ground about twice as long as corn, frequently requiring as much as twenty or twenty-five days before they show

their sprouts above ground. Early planting, at least ten or fifteen days earlier than corn, unless the seeds have been sprouted before hand, should in all cases be practiced. Next to this, the land should be naturally warm and rich. Without these, the cultivator need not expect to make sugar, or even good molasses, and he had better plant some other crop. Plant before the first of May.

From its strong tendency to tiller, or produce offsets from the roots near the parent stem, it will yield most if planted in drills, four or five feet apart, and about eighteen inches from plant to plant. This would allow the original reed and four suckers to each plant, all of which would reach full size. If planted in hills, there should not be more than sixteen hills to a square rod, and three plants of nine reeds would be an abundance. More reeds in either case would not succeed. This cane is but a gigantic grass, and tillers in the same manner, and not like corn. I should prefer the drill culture to the hill if I desired to produce the greatest amount on the acre. Each plant would then occupy its own space. So too, rich warm soil cannot be dispensed with. Where such soil can be had, with early planting and good culture, ripe plants may be safely calculated upon in this State.

Every plant reared from a seed is, so to speak, a new vegetable being—possessed, it is true, of many, aye, most, of the qualities of the parent plant, but it has also some new ones derived from local causes. One of these new qualities is a strong tendency to adpat itself to the climate of its nativity. Hence some plants which form trees in tropical climes, have produced a progeny of annuals in the temperate zones. Others have merely hastened the period of their maturity. The Sorghum is of this latter class. The only cause of fear is, that it may decrease in the amount of saccharine juice. Time and experience must solve this problem. Unitl it is solved, it will undoubtedly be best to plant home-raised seeds, even lighter in weight, than those imported from further south.

Each planter may readily supply himself with sufficient plants

for seed, by planting a few hundred seeds in a temporary hot bed, or sheltered spot, as early cabbage and tobacco plants are reared, and these may afterwards be transplanted into the open grounds. Such plants will seldom produce suckers. A fortnight may be gained by this process in ripening the seed, and the produce will be fully matured seeds.

Too much caution cannot be taken, that the seed plants are grown beyond the influence of broom and coffee corn. One of these last plants would ruin the seeds of fifty Sugar Cane plants.

In the next place I shall treat of the quantity and quality of the juice of Sorghum and Imphee, as compared with the juice of the true sugar cane; and the probable profits of its culture. Subsequently of the manufacture of sugar.

We now take it for granted that the farmers who intend to raise the Sugar Cane, will plant their seed on rich, warm soil, as early as the twenty-fifth of April; that they will cultivate the plant as good farmers do Indian corn, rearing just enough to fill the ground, and then, that they are looking forward to the produce of the crop. To aid them in their calculation as to the quantity and quality, is my object at this time.

Instances have been known of 2,500 gallons of crude juice produced on an acre of land. Though the average yield should be about 1,000 gallons. A moist soil, or wet season, if there be sufficient warmth, will produce large reeds; but the juice contained in them will contain a less per cent. of sugar, in solution, than smaller reeds raised in a dryer season, on more porous soil. The density of juice, perhaps compensating for diminution in quantity. It has been known to vary in density from 12 to 35 per cent. in saccharine matter. As a general thing it contains about 20 per cent.

There is the greatest amount of juice from the time the seeds have hardened so much that they will grow, until they are fully matured; and at that time it also contains the greatest amount of sugar.

From this rule there are exceptions. If the weather be warm, with much moisture in the soil, then there will be an ex-

cess of water and gum in the juice. The plants have the habit of the true Sugar Cane in producing, besides the seed-panicles, eyes or bulbs, at the axils of its leaves, from which new plants may be propagated by cuttings and layers. Therefore the stalks do not necessarily cease maturing juice, when the seeds are matured, like corn or grain, but these axillar bulbs will push forth, and mature other seeds. The heat of summer is also unpropitious for the formation of sugar in this plant. Hence, other things being equal, more sugar will be held in solution when the thermometer sinks so low that vegetation ceases at night. Even a slight frost has been supposed to increase the amount, which will be again diminished by an increase of temperature sufficient to induce vegetation to commence.

So, if from want of moisture, the plants tend to wilt, or become pithy, there will be a deficiency in the quantity of juice. But unless this cause be brought to operate upon the immatured reeds, it will have no other effect than to produce a juice denser in saccharine matter—an advantage to be desired.

This difference in the density, as noted by the areometer of Baume, is from 8° to 18°. The scale being distilled water at 60° Fahrenheit, and 40° pure sugar-house molasses.

In Wisconsin we have sufficient rains in August and September to continue the sap in full flow while the seeds are maturing, and yet the nights will be cool enough to perfect the product of sugar. In this particular, our climate is more favorable to the production of sugar from the Chinese and African Cane, than is the climate further south, as in Kentucky; where, if the seeds are planted the same time as corn, the immature reeds would suffer from the summer droughts; and if planted early enough to escape these last, they would come to perfection in the height of summer heat; and so have an excess of immature juice. If these things are so, then the farmer of Wisconsin, by early planting of home-raised seeds, on warm soil, may safely calculate on his plants giving a full average yield of juice, and of more than an average density.

The Sugar Cane yields in Louisiana, Texas, and Florida, on an average, 1000 pounds of sugar, and 75 gallons of molasses to the acre. Such is also the yield of most of the West India Islands, except on such pieces of land as are irrigated and highly manured. This amount of sugar and molasses would indicate a yield of from 750 to 875 gallons of the crude juice to the acre. In this particular, the *Sorghum* in Wisconsin will greatly exceed the sugar fields of the South,—not unfrequently producing twice that quantity. A little more than half of this crude juice is convertible into crystalizable sugar, by the means heretofore used by the sugar manufacturers. To produce the 750 gallons of crude juice in Louisiana, requires about 13,000 pounds of stripped reeds of the Cane, ready for the crushing-mill. Under the best management in grinding with the common rolling mills, not more than 69 pounds of juice can be obtained from 100 pounds of reeds, though there should be at least 85 pounds from the 100.

In this last particular the Sugar Cane of the South is less productive than the Sorghum or Imphee, because it contains considerable more woody matter. These last will yield as high as 92 pounds of juice to 100 pounds of reeds. They ripen the whole plant, while the Sugar Cane in the Southern States does not ripen but about four feet in length of the fourteen feet of growth. And even with the precaution of cutting off the immature top portion, much unripe cane goes to the mill, the juice of which will not crystalize. Thus we have another reason why the juice of the Sorghum and Imphee, is richer in sugar than the juice of Sugar Cane.

From what has been said it must not be supposed that the reeds of the Sugar Cane, Sorghum, or Imphee, contain but 60 or 70 pounds of juice at about 18 per cent. sugar, in 100 pounds of reeds; or that these reeds contain from 30 to 40 pounds of woody matter, only fit for the manure pile. Or, to be better understood, that there is but 10 or 12 pounds of sugar in 100 pounds of reeds. On the contrary thereof, there is at least 18 pounds of sugar in every 100 pounds of reeds.

The loss arises from defects in the crushing mill, and the impossibility of extracting all the sugar by compression. Critical experiments have proved this loss to amount to at least 33 per cent., and may easily reach 50 per cent., or an absolute loss of 1-3 or 1-2 the sugar contained in the reeds. It is produced by three main causes.

First. The sugar is held in the Cane in a crystalized form, and not dissolved in the water of the reed, and it takes some little time for the water to make the solution after the Cane is crushed.

Second. The juice of the Cane when crushed out, with all its other impurities, contains about as large a proportion of sugar as it can hold in solution without the aid of artificial heat and air. It must therefore leave the crushed canes saturated with itself after grinding in the common rolling mills.

Third. The juice in that portion of the reeds in immediate contact with the external surface, or most woody portion of Cane, contains at least twice as many crystals as is contained in the juice of the central or pithy portion. From this, it must be plain that a large amount of sugar must be left behind in the crushed Cane.

Considerable has been done to obviate this loss, in the construction of the various mills which have been invented. But still the loss of sugar has been very great.

The experience of the farmers of Wisconsin will sustain me in all these statements concerning the amounts produced. If we can but crystalize the sugar in the juice of the Sorghum and Imphee, as cheaply as the planter of Louisiana does the juice of his Sugar Cane, then we must make sugar here for the same price that he can there. The idea is certainly worthy the trial.

Extensive and critical experiments have shown that crude juice of Sorghum or Imphee, and of Sugar Cane is so nearly identical in all particulars that a description and analysis of the one will answer for the other without material error: at least, there is not a greater disparity in the qualities of the juice of

the first two and the last, than between the juice of the Sugar Cane reared in different climates.

Dr. Evans tells us that Sugar Cane juice, when recently expressed, is opaque, frothy, and of a yellowish green, or sometimes grayish green color. It has an aromatic and sweet taste, a balsamic odor, and produces a slightly acid reaction on litmus paper. In the latter respect it offers considerable variation.—Its specific gravity is said to vary from 1.046 to 1.110, or from 7° to 15°, Baume. These must, however, be considered as its extreme limits, which are rarely observed. He had never seen it in any country of a density below 10°, nor higher than 13°, the temperature being 80° Fahrenheit. Its specific gravity usually fluctuates between 1.070 and 1.090. The difference in density depends upon many causes, as the age of the cane, the climate, the soil, the season, the temperature of the atmosphere, etc.

The Cane juice consists of two parts easily separated from each other by filtration, the one being a perfectly transparent fluid, of a pale yellow color ; the other a dark green fecula, which remains upon the filter. The latter, upon examination under the microscope, is seen to be formed of a green globular matter (chlorophylle,) portions of woody fibre, cellulose, in a state of the broken up wall of the cells, and a few shreds of coagulated fibrine. By the application of heat and some defecator, these substances separate readily from the juice, and then constitute the scum of the clarifiers. This scum has been analysed, and consists of cerosin, or wax, 7.5, green matter, 1.3, albumen and woody matter, 3.4, biphosphate of lime, .5, silica, 2.1, water 84.2.

The transparent liquid which remains when the above matters have been separated by filtration and defecation, consists of water and sugar, and a small quantity of dextrine, varying, probably from one to four parts in a thousand in ripe and healthy cane ; also soluble compounds of proteine, saline matter, and a coloring principle distinct from the green matter mentioned above, soluble in water.

The constituents, as determined by analysis, from an average taken from various experiments made by different persons, are as follows : water 81, sugar 18.20, organic and saline matters .80, in all 100.

I shall here introduce a synopsis of a letter from Mr. Taylor, of London county, Virginia, relating to the Imphee.

Last spring he procured from A. O. Moore, of New York, four packages of African Sugar Cane Seed, of an ounce each, marked Boomoowana, Neesana, Oomseeana, Enyana. Boomoowana and Neesana were marked "early," and the others "late." They were planted on the 15th and 20th of May, on ground that would produced forty bushels of corn to the acre, in rows four feet, and in hills two feet apart. The stalks were larger than the Sorghum, but not so tall, seldom above eight feet. The heads were more compact, and yielded much more grain. The Boomoowana yielded at the rate of sixty-six bushels per acre, and weighing fifty one pounds per bushel. The Neesana and Oomseeana yielded at the rate of fifty bushels, of sixty pounds, per acre ; and the Enyana, being on inferior soil, yielded only thirty-six bushels, of sixty pounds, per acre. Some of the seed was ground by him and produced flour far superior to buckwheat in yield and quality ; which, mixed with one-quarter wheat flour, made fine, light bread.

As a Sugar-producing plant it was much superior to the Sorghum, at that place. The juice marked a density of 1.125 to 1.144, or of 16° to 18° Baume, and would yield from 29 to 30 per cent. of saccharine matter. He boiled some of the juice, and had no trouble in granulating it into cane sugar ; showing a quality one-half better than Sugar Cane.

These varieties will ripen in this State, if planted at the time I have before named for planting Sorghum ; to do which there can be no difficulty this year, from present appearances, (March 7th), when the ground is about thawed out. I am not aware that seeds of the Imphee can be procured, though there is an abundance of Sorghum, raised last year in this State, for sale ;

and until more is known of it, I would not recommend its being tried, beyond experiments, by farmers.

ANALYSIS OF SUGARS.

Sugar, and a class of substances nearly allied to it by chemical combinations, constitute the chief mass of the vegetable kingdom. These substances are mild in their character, and generally tasteless or sweet. They are as follows:

	Carbon.	Hy.	Ox.
Woody fibre or cellulose (hard wood),	12	8	8
... . do.....do.....do	12	10	10
Starch,	12	10	10
Cane sugar,	12	11	11
Gum (Arabic),	12	11	11
Grape sugar (dry),	12	12	12
Grape sugar (crystalized),	12	14	14

This singular combination of twelve equivalents of carbon with hydrogen and oxygen in equal equivalents, shows that they are all derived from the same common source, carbonic acid. This will account for the fact that all juices of plants, while growing, contain this acid in solution.

Another fact, depending on the circumstance that they all contain twelve equivalents of carbon, and differ only in the amount of water or its components, is this: All before grape sugar may be converted even artificially into that substance. The conversion of starch into sugar, constantly takes place naturally, in germination, as is seen in malting; and of both starch and woody fibre occurs in the ripening of fruits. In these processes, it is brought about by contact of ferment. That is, it adds water or its elements to the carbon. The same result is obtained artificially by boiling them in sulphuric acid; and also, in the case of starch or sugar, by adding an infusion of malt (yeast), which, in fact, is but a solution of grape sugar.

Cane sugar is known by its rhomboidal crystals, and by being soluble and sweeter than grape sugar. In contact with an acid or ferment it becomes grape sugar, and then, but not before, it undergoes fermentation.

The action of the ferment appears to depend on its being in a state of decomposition, consequently of molecular motion; and this motion communicated to the molecules, or rather to the atoms of the sugar, suffices to destroy the existing equilibrium, and produces a new one, forming a grape sugar and subsequent fermentation.

Grape sugar is distinguished from cane sugar by being less soluble and less sweet, and also by being easily decomposed into brown products by heating with diluted alkalies. It is the only kind of sugar which undergoes fermentation; all the others are first converted into grape sugar, and then they ferment.

When the ferment is yeast, or vegetable fibrine (proteine) in a state of decomposition, the vinous fermentation takes place in a solution of sugar. The juice of the grape, the infusion of malt, and the juice of Sugar Cane, all contain sugar and fibrine, and only require to be exposed to the air, and fermention will take place.

When caseine (the basis of cheese,) is the ferment, sugar, at the temperature of from 80° to 90°, is converted into lactic acid. With the same ferment at a higher temperature, lactic acid undergoes the butyric fermentation, especially if not neutralized.

Sugar of milk has the same formula as grape sugar, and passes into it by contact with acid; and then it ferments.

Besides the kinds of sugar we have been noticing, all of which pass into grape sugar, and in that form undergo fermentation, there appears to be a kind which is uncrystalizable, but it is rendered so by impurities. Molasses, or the uncrystalizable liquor from the Cane is rendered so by a species of fermentation, or by the action of certain bases on the sugar during the evaporation, which produces two brown acids, *glucic* and *melassic;* the presence of which deprives a great part of the sugar of the power of crystalization. This formation of glucic and melassic acids, is the great obstacle the manufacturers of sugar from Sorghum have had to contend with. This difficulty

is not overcome, but is actually increased by the use of crude alkalies in the manufacture. However, this source of loss is now happily greatly diminished, by carefully neutralizing the lime, when that is the alkali used, with sulphurous acid before using it in clarifying the cane juice, as I shall hereafter more fully explain; and it is further almost completely overcome by the use of the vacuum pan for boiling the juice.

The changes of fibrine into starch, starch into cane sugar, cane sugar into gum, and gum into grape sugar, or fermenting sugar, take place in all instances where the substances are dissolved in water, in contact with the air. The period of time necessary for complete action will vary with the temperature of the solution, as well as in the new substance which will be formed. But in all cases where the decomposing fibrine, casseine or albumen are present, the change will be more or less active, and the sugar will undergo a change in that proportion.

To clarify the cane juice of these fermenting qualities, and preserve the sugar intact, will be the object to which I shall next direct my efforts; and if I can render the farmers of Wisconsin any service in that line, I shall consider myself compensated for the time I shall spend on this subject. In the meantime I know they will overlook and kindly review the language of the laboratory, which I am compelled to use, when as many of them are explained as can be, and when my object and aim are taken into the account.

OF THE CLARIFICATION OF THE JUICE.

In giving the analysis of the juice it was mentioned that it produced a slightly acid reaction on litmus paper. This acid action arises either from the carbonic, or some other acid, formed by the vegetable action of the living plant, or from acetic acid formed by fermentation. But whatever the acid may be, it is deemed necessary to remove it from the juice or the cane sugar will be destroyed. For this purpose the sugar manufacturers have used some of the common alkalies—potash, soda and lime. All the compounds of soda and potash with vegeta-

ble acids are soluble in water; and if these alkalies are used as neutralizers, they will remain in the syrup, and become injurious to the crystalization of the sugar.

Lime on the other hand forms insoluble compounds, and is removed by the filter from the syrup: It has been usually applied in the form of quick lime, or milk of lime. In this form however, it will act in some measure upon the basis of cane sugar and convert it into grape sugar, and finally into melassic acid by the aid of heat. Quick lime by its action upon the bases of fibrine, casein, and albumen, converts them and a portion of the cane sugar into glucic acid, which uniting with another portion of the sugar, forms uncrystalizable and fermenting grape sugar, thus giving rise to the large quantities of molasses produced at the sugar houses of the sugar makers.

Cane sugar is no more the sap of the plant, than the juice of the ripe apple is the sap of the apple tree; but it is the natural product of the plant we are considering; and is found in them only in a mature state.

If the cane be cut in two and examined with a magnifying glass, the crystals will be seen as distinct and white as double refined sugar. The object of the operator should be to separate these crystals, without altering their color. They should be separated with as few impurities as possible. To accomplish this last process, many inventions and plans have been proposed, but all have more or less failed.

Failing in perfection, the next object has been to clarify the juice from the impurities as far as practicable, because their presence will produce almost instantaneous fermentation. Most of them can be coagulated by heat and removed by the skimmer and filter, but not all. Some will burn at 120° Fahr., giving rise to coloring matter in the boilers, and a decomposition of sugar, during the process of evaporation, or the formation of other materials highly injurious to crystalization.

Among other impurities found in the juice, in the process of manufacture, acetic acid is no inconsiderable one. With it lime forms an exceedingly soluble salt, very offensive to the taste,

and removed from the syrup with great difficulty. Lime also unites with fibrine, casein, albumen and gum, and renders them permanently soluble, while it precipitates starch alone.

Nature has shown us that we can convert fibrine, starch, cane sugar, gum, grape sugar and alcohol into acetic acid, or into each other in the order named, yet the order cannot be reversed. The change requires but an almost imperceptible decrease of carbon. They all act upon lime in the nature of an acid, and with it form different salts. There is another quality of quick lime which must not be forgotten, and which injures sugar. It is never found in nature, but is always combined with acid. If that acid be driven off, it will supply itself with the same, or seek another. If we examine this action of lime on sugar, we shall be startled at the result.

The formula of sugar was C 11, H 11, O 11, or more exactly, carbon 42.48, and the elements of water 57.53; and of gum it is carbon 42.23, water 57.77; so that if there be extracted from 100 grains of sugar 24-100th of a grain of carbon, and 14-100th of a grain of water be added, the result will be the 100 grains of sugar will be converted into gum. Now suppose 1000 grains of lime remain in the solution of cane juice, after boiling and filteration; those 1000 grains of lime will require 761 grains of carbonic acid to convert them into carbonate of lime or chalk. This carbonic acid consists of 210 grains of carbon, and 552 grains of oxygen. The carbon must be extracted from the sugar, as there is no other body from which it can come. But if 100 grains of sugar cannot part with 24-100ths of a grain of carbon before it is converted into gum, the abstraction of the 210 grains of carbon will be sufficient to change 87,500 grains, or 15 pounds of sugar into gum. This result will not happen, as the lime will change a portion of the sugar into glucic and and melassic acids, and then unite with them, and thus destroy a less quantity. Here in one considerable cause of the formation of molasses.

The use of quick lime not only produces a loss of sugar as we have just shown, but the greater the quantity of lime in the

juice, the longer it must be boiled, and the greater the heat required, and therefore the darker and finer the grains of sugar.

Acetic acid, we have shown, cannot be removed by lime. On the contrary it will evaporate like alcohol, with the water in boiling. Any one may test this experiment by adding distilled vinegar to a solution of sugar and evaporating the mixture at boiling heat. The sugar will remain nearly intact.

To repeat: lime should not be used merely to neutralize the vegetable acids; 2d, if acetic acid be present, quick lime should not be used at all, as its action is highly injurious; 3d, its action on the impurities in the juice is equally so; 4th, by acting on the sugar in the formation of gum and glucose, it increases the quantity of molasses, and injures the quality of the sugar; and lastly, it is unfit as a clarifier except to separate the starch.

Such are the deductions made by Simmonds, in a long series of experiments, and they are confirmed by Wray, Scroffern, and Benjamin. So great are these objections, that some planters are making up their crops in the vaccuum pans, without the use of lime. These last find other obstacles equally difficult to overcome, by which their loss of sugar is about as great as where lime is used.

To obviate these difficulties, many other substances have been resorted to, only a few of which will be noticed.

A few years ago a patent was applied for at Washington, to use acetate of lead as a defecator. The rationale of this patent was, that acetate of lead would be decomposed by the heat of the boiler, when the acetic acid would escape, and the lead base would unite with the fibrine and other impurities and precipitate them in a filter. But the patent was refused by the Department on the ground of the danger attendant upon the use of so virulent a poison as sugar of lead, or even lead oxyd, in the manufacture of sugar.

Another substitute was supposed to have been found in the sulphate of aluminum. To the use of this salt there were two objections, which must preclude its use. 1st. The difficulty of procuring the salt will always make it command about one-half

its weight in silver. 2d. The salt will decompose by heat, and the free sulphuric acid will then produce its peculiar injurious effects upon the sugar. It was proposed to overcome the first of these by the use of the alum of commerce; but while this did not overcome the last difficulty, it even produced a new one. The decomposition of the salt of alum produced free potash to act upon the sugar, as well as sulphuric acid.

A few years ago at Valenciennes, in France, a manufacturer had a process of extracting the sugar from beet molasses, or treacle, by caustic barytes. Forty-six parts of barytes was used for one hundred parts of sugar in the treacle. This formed an insoluble saccharate of barytes, and which, after being washed, was again decomposed by the action of carbonic acid gas, leaving the sugar in a pure form dissolved in water, and ready for evaporation. It was said to be economical, but the plan was new, and I am not aware that others have practised it.

Various mills and presses have been suggested, but all have been attended with difficulties and objections. In the Patent Office Report of 1858, will be found a long essay upon the extraction of sugar, by first drying the cane and beet, and then extracting the sugar by the use of warm water. Machinery for that purpose have been patented in England and in this country. Experience, that best of all schoolmasters, has taught the inutility of this last, and it is now abandoned by the sugar manufacturer.

After giving one more recipe, which has been so little tried that its value cannot be determined, and although it is highly spoken of by some manufacturers, it is not difficult to detect its defects, I shall give what is the best of all agents for the perfect clarification and crystalization of sugar.

Take of sub-carbonate of potash two ounces, sulphur two and a half ounces, best slaked lime one and a half pounds, mix them into a paste in an earthen pan or wooden tub, with one quart of water, and when thoroughly mixed, pour in ten gallons of warm water, stir from time to time, until it is cooled, when it may be drawn off from the sediment and kept for use.

This is the celebrated Ramas' prepared Plantain juice, and has been very extensively used in the West India Islands, especially in Trinidad. It must contain free alkalies, lime and potash, and be injurious to the sugar.

The French government in giving encouragement to the manufacture of sugar from sugar beets, has employed the best chemists of the nation in experiments to overcome the difficulties which the sugar manufacturers experienced in their labor. In their reports they have given to the world a vast amount of information and learning. We shall not be true to the American character, if we do not appropriate this knowledge to our own use in the manufacture of sugar from Sorghum. From them, and especially from M. Melsens, what follows will be drawn.

This chemist started with the well known fact, that all the saccharine matter contained in healthy sugar cane and healthy beets, could be extracted and crystalized. He also knew that this matter could be easily extracted by means of weak alcohol, which could be afterwards driven off by evaporation, and leave the sugar in pure and colorless crystals. He knew that this effect was entirely different when water was used in place of alcohol. He knew too, that in the sugar cane and beet there existed certain fermenting matters, capable of transforming sugar into other substances ; but that in order to do this, it was necessary that they should be placed in contact with the cane sugar by means of water, and the free action of the air.— This fermentation and change is so rapid in the tropics where the sugar cane is produced, that in thirty minutes after the juice is expressed, its character is completely changed, and its crystalizable qualities destroyed. Therefore the manufacturer could lose no time in bringing the juice to a boiling heat, which in part removes the fermenting materials. Although this fermentation and change is less rapid in France and in Wisconsin, in the cool weather when the juice of the beet and the Sorghum would be expressed, still it is sufficient to create difficulty and loss of sugar. Hence men have resorted to great hurry, and

the use of alkalies, in order to avoid and overcome some of this loss.

The chemist who makes an experiment, solves the problem of the extraction of sugar by the use of alcohol. By this agent he separates the saccharine matter from the fermenting substances, and destroys the latter without injuring the former, thus preserving the sugar from any destructive influence. But this course will not answer for a large operation. There it is necessary that the agent should be cheap and easily managed. Alcohol is dear, its use requires the greatest precaution, and is very dangerous. So, setting aside alcohol, is it possible for chemistry to produce a substance which has the properties essential for this case, and which, like alcohol, will prevent its fermentation, even when exposed to the air?

In the Sugar Cane there is sugar dissolved in water; nevertheless it rests in that condition a long time without any change. If we could make use of water, as a dissolvent, in the same manner that nature does, we could extract the sugar without destroying its quality. The difficulty exists neither in the water nor in the sugar, but in the fermenting matter contained in cells formed by the tissue, which the contact of the water and air put into motion. This being the case, if it were possible on a large scale to crush the cane in a vacuum, to extract and boil the juice without removing it, the problem would be solved.—But it is not, though much has been done in that line in boiling the juice, and by pressing mills lately patented.

Experimenting with various substances, and having in view the discovery of some substance which would prevent the fermentation during the extraction of the juice in contact with the air, and while cold, and profiting by the coagulation of the fermenting substances caused by heat in boiling, M. Melsens sought for some substance having a great affinity for oxygen, but without action on the sugar, or danger to man,—a substance which was cheap, easy to produce everywhere, or to transport when it was needed.

His experiments and information pointed him to the use of

sulphurous acid. Its efficacy as an obstacle to fermentation was so well proved, its price so low, its production so easy, and the substances so universal—merely burning sulphur in the atmosphere, that it seemed to answer all the purposes.

At the same time that M. Melsens was experimenting in Paris, 1847, Dr. Scoffern was also engaged in experiments upon brown sugars, in England, and studying the action of lime upon them, he sought for a remedy to deprive the syrup of any excess which might have been used in the tempering. Under date of May, 1847, he says the best plan consists in using sulphurous acid. In July, 1847, he says, he was fortunate enough to find an agent to precipitate the fermenting ingredients from the juice, which might be used without chemical superintendence, everywhere. That agent was sulphurous acid. In another place he remarks that there are certain acids from which, under no circumstances, was he able to recognize anything injurious to the constitution of the sugar. Of these he cited carbonic and sulphurous acids. The latter had long been known as an anti-ferment. Taking advantage of these properties, he was enabled to obtain a specimen of cane juice from the island of Barbadoes, in such a state of preservation, that he extracted from it upwards of 20 per cent. of sugar. Experiments by Melsens, however, proved that while it had the desired effect at first, yet being long in contact with air and water saturated with sugar, it was converted into sulphuric acid, forming grape sugar, and so destroyed the crystals of cane sugar. This effect was increased by the heat necessary to the evaporation of the juice.

To prevent this action of the acid, a powerful base, as potash, soda, or lime was called into requisition, and it was found that this base would unite with the sulphuric acid as soon as found, and thus the sugar remained intact. Of the salts used, the acid sulphite of lime, (bisulphite) presented the most interesting properties. The sulphurous acid in excess prevented all fermentation. The base of the salt, lime, neutralized the sulphuric acid as fast as it was formed, leaving only a neutral sul-

phate of lime, insoluble and indestructible, and which would separate from the sugar in the filter.

Experiments proved that the sugar candy dissolved in water with bisulphite of lime even in excess, would crystalize without loss, and without change, by spontaneous evaporation, at a very low heat. But a large quantity of bisulphite used with a small quantity of sugar and the mixture heated for several hours, so changed the sugar as to render it uncrystalizable. It takes a great deal to destroy the sugar, and a small quantity to destroy fermentation.

All the experiments made with sugar candy proved that the bisulphite was a substance having a great affinity for oxygen, in forming sulphuric acid, and an antiseptic. That it had no injurious effect on the sugar. That if it were poured cold on the beet grater or the sugar mill, in such a manner as to mix with the juice the moment the cells were broken, the juice remained unchanged. It would also endure the heat necessary for clarifying the sugar without injury. The time and heat employed in the clarification would also completely neutralize the bisulphite, and after purification it would leave the juice purified from the fermenting matters, and prepared for evaporation, without loss of sugar.

It also possessed great powers of clarification. Fifty parts of sugar candy, 250 parts of milk, 250 parts of water, and 50 parts of bisulphite of lime, at 10° Baume, were mixed together, boiled and filtered to separate the parts that were coagulated. The concentrated liquid gave, by polarized notation, a mass of perfectly crystalizable sugar of 92 per cent. The purification was perfectly easy and complete. The sugar remained intact, notwithstanding the vast amount of casein in the mixture; the apparent loss of 8 per cent. arising from uncrystalizable sugar of milk in the mixture, and not from absolute loss.

At the temperature of boiling water, it separates the albumen, fibrine, casein and other analagous matters which exist naturally in the cane. This separation is effected without loss

or change in the sugar, except perhaps 2 per cent. of the mass, of which no account need be taken.

The vegetable acids will decompose the sulphite of lime and unite with the lime in an insoluble form, and thereby be removed from contact with the sugar by the filter.

The coloring matter of the cane syrup comes *first*, from substances dissolved in the juice; *second*, from the contact of the air, with the pulp and juice; *third*, from the heat employed in the evaporation, changing the character of part of the sugar and the substances connected with it; and *lastly*, from the air, lime and ammonia, aided by heat, during evaporation, giving rise to alkalized coloring matters. These are the causes which produce the brown sugar of commerce, and the browner molasses from the southern cane fields, and the syrup of Sorghum in Wisconsin.

The bisulphite of lime carries away almost immediately the coloring matter that exists in the cane and the beet. It prevents the formation of others in the process of manufacture, and especially of those formed by the action of the air and a free alkali. This bleaching power although not absolute, is very great.

In preventing the coloring of the pulp, the bisulphite is wonderfully efficacious. Pulp of beets has been kept for six months in badly closed vessels, at a temperature of 60°, which remained colorless and unchanged. Without the bisulphite, the pulp would have become very brown from the action of the air, and have undergone complete fermentation.

When the evaporation of cane sugar, or cane juice, takes place without the use of artificial heat, there will be no coloring matter created by fermentation, where the bisulphite is used. Where artificial heat is used, the coloring matter is scarcely perceptible. The effect is so great that sugar obtained from red beets will be completely colorless by the use of this article.

Bisulphite of lime should be used in the manufacture of sugar from cane, beets, or even maple, for the following reasons:

1st. It is a powerful antiseptic, preventing the production or action of fermenting matters in the juice.

2d. It has so great an affinity for oxygen that it is capable of preventing the changes which the presence of that agent causes in the juice during the process of manufacture.

3d. At the temperature of boiling water, it defecates the juice, and removes from it all the albumen, fibrine, casein, and other coagulable matters, except a very small portion which turns first violet, and after brown, giving a slight tinge to the sugar.

4th. It carries away the pre-existing color in the juice.

5th. It is capable in the highest degree of preventing the fermentation of coloring matter in the pulp or juice during the manufacture.

6th. It is capable of neutralizing all the hurtful acids which may exist, or be found in the juice, substituting for them an acid almost inert, (sulphurous acid,) which will be driven off by the heat of evaporation, or by contact with air necessary to dry the grained sugar.

Under what form, and in what quantitity shall the bisulphite of lime be applied to the Cane or beets? These questions next demanded Mr. Melsen's attention, and to determine which, he entered upon another series of experiments.

He obtained from the Island of Murcia, 100 pounds of fresh Sugar Cane, for his experiments. They reached him in Paris, at his labaratory, in fair condition, though pronounced by persons who had been in the colonies, and acquainted with Sugar Cane, imperfectly ripened, and therefore they might be expected to yield a large supply of molasses. A good many were also worm-eaten.

He extracted the juice by means of a coarse beet grater and press, adding bisulphate of lime during the operation of grinding. It was clarified by boiling, and simply filtered through a cloth strainer; boiled a second time and filtered, and then left to crystalize slowly. This it did to almost perfect dryness. An analysis by alcohol could have given nothing better

either in quantity or quality. It was even more colorless than sugar obtained by alcohol. All the sugar contained in the juice took a solid and crystalized form. The crystals were large and firm, not more colored than ordinary sugar candy. The traces of molasses were almost imperceptible.

He changed the proportions of bisulphite; experimented separately on the ripest canes, on the greenest, and on the worm-eaten, and in all cases the result was the production of crystalized sugar. He never found a spoonful of molasses that could not be crystalized. The analysis of the juice by notation, and the action of the bisulphite on it were always the same, both as regards the quantity of sugar in solution, and the amount obtained by crystalization.

The operation was so simple and so correct in its results, that he thought it almost necessary to do wrong expressly in order to fail to extract all the juice from the Sugar Cane, or the beet.

But how was this to be done, when every one knows that juice extracted from the Sugar Cane is sometimes not more than half, and never more than three-fourths the quantity of sugar really contained in the reeds? There remains in the crushed canes at least a fourth of the sugar, because it cannot be pressed to dryness. To extract this by washing with water is impossible, on account of the rapidity with which fermentation takes place.

But if bisulphite of lime be mixed with water used in making the washings, nothing is easier. There is no need for hurry. The water and pulp will not ferment, and the washings may be so perfect as to extract the last particle of sugar. These washings will be nearly as rich as the juice itself, and when evaporated, will produce the same large crystals of sugar. More than this, the skimmings and filter after having been several days exposed to the action of the air, were washed with water mixed with bisulphite, and being evaporated produced crystalized sugar.

Thus it renders the cane sugar almost as unalterable as min-

eral salts. By its use the juice, the crushed cane, the scum and the filters are made to yield the same large drains of colorless sugar. No care, no study, no hurry are rendered necessary. As long as the bisulphite exists in the smallest quantity in the liquid, it prevents an alteration in the sugar.

Such are the startling experiments of a man of science who had no powerful mills for crushing the reeds; who worked with such means as he had at his command in the city of Paris, in a chemists laboratory; the results of whose experiments scarcely exceed the simplicity of the instruments with which he labored.

1st. He broke, or rather tore the cane to pieces by means of a hand beet grater, watering the pulp during the operation with a solution of the bisulphite of lime. He pressed out the juice with a small press; boiled, filtered, and evaporated it to the density of about one-third what the cold syrup should be, filtered again, and left it to a slow evaporation in a current of dry warm air. This gave him a mass of candy, from which it was impossible to extract any molasses.

2d. The crushed and pressed pulp was wet with water mixed with bisulphite, and submitted to another pressure, which produced another juice less rich. This juice was treated in the same manner as the first, and gave the same large grained cane sugar.

3d. The last experiment was repeated.

By an analysis with alcohol he had discovered that the 100 pounds of reeds contained about 18 pounds of sugar. He also found that by grinding and pressing he could extract but 60 pounds of juice, and from that he could procure but 12 pounds of sugar. There was therefore a loss of 6 pounds left in the crushed cane, which had been thrown away on the sugar plantation. But in this experiment he had greatly exceeded the best efforts of the sugar manufacturers. The usual amount obtained by them was 6 or 7 pounds of unrefined sugar, thus making a a loss of 5 or 6 pounds against them in molasses, besides the amount left in the crushed cane and entirely lost.

His process had given 12 pounds of refined sugar from the extracted juice, and by the washings he saved the other six pounds, all refined sugar. In other words he extracted all the sugar contained in the reeds, with but a trifling loss.

In these experiments he concluded that one per cent. of the weight of the reeds of the solution of bisulphite of lime at 10° of Baume, was the proper quantity—that is one pound of the solution was sufficient for 100 pounds of reeds. With that amount he took out all the sugar in a solid form, leaving the *bagasse* fit only for the manure pile, or manufacture of straw paper.

He went even further. He took beet juice which contains but 10 per cent. sugar. To this he added 4 per cent. of the solution, and clarified it by boiling and filtration. He then put it into a pine vessel pierced with holes, into each of which he had drawn a string which hung down, thus affording numerous means for the juice to run off, and also giving a large surface for evaporation. This vessel was placed in a current of air. As fast as the juice was collected in a vessel placed under the strings, it was poured over again. This was repeated several times, and the concentrated juice or syrup, as it had become at last, placed in a flat vessel, where it all crystalized.

I shall not follow M. Melsens further in his experiments with the juice of the beet. Suffice it to say that he has overcome the most serious difficulties which the manufacturers of sugar had encountered. He has shown that there need be no hurrying the process of evaporation, nor serious loss of saccharine matter. He has proved that with ripe cane, there need be little or no molasses made; all may be crystalized.

In 1853, Mr. Ramsey, of Trinidad, visited many of the sugar manufactories in France, and called on M. Melsens, and staying with him two days, saw and assisted him in going over many experiments, with which he was perfectly satisfied. He was shown letters from several foreign places, and especially one from Java, which states that the writer had used the bisul-

phite with complete success. During his stay, M. Melsens received another communication from Java, informing him that the use had not only improved the quality of the sugar, but also raised the return nearly one-half in quantity. It had been used on a very large scale with the advantage of filters and vacuum pans.

Mr. Ramsey found in use at Valenciennes a process of extracting the sugar from beet molasses, by caustic barytes. It was said to be economical, but he was better satisfied with the method of M. Melsens.

In the 3d vol. of DeBow's Review, p. 210, 1854, Mr. J. P. Benjamin informs us that a considerable quantity of an ingredient, of which the composition is a secret, has been imported into Louisiana by Mr. Alexander Gordon, and is undergoing the test of experience. It is afforded at a cheap rate, and if it succeeds in replacing the lime which imparts so obstinate a yellow tint to the syrup, as the inventor feels confident it will, another great step will have been made in the march of improvement towards the perfection of the manufacture.

Query.—Is not this article the bisulphite of lime?

The bisulphite of lime can be procured in Wisconsin at about 5 cents a pound in quantities. It requires only about one-fourth of a pound for 100 pounds of reeds. This cost will scarcely be felt by the manufacturer, and when its advantages are taken into the account, it will be readily borne. Should the manufacturer enter upon the process of washing the crushed cane, the water used for washing may be filtered upon the mill during the process of grinding, and would be sufficient for the preservation and defecation of the the juice.

These discoveries are worthy of the expense incident to a more careful investigation of this subject. And hoping that the means will be found, I leave the subject for the present, with the fullest assurance, that the people of Wisconsin have but to make use of some of the most approved methods and we can produce from the Sorghum and Imphee all the sugar we need.

SEEDING THE SOIL.

By J. W. HOYT.

Assuming that the seed has been properly selected and prepared, the next subject of inquiry is, How shall it be planted or sown? The answer must relate to *time*, *quantity*, *distance apart*, *depth*, and the *means employed*—particulars of much importance and therefore worthy of careful attention and elaborate discussion.

THE PROPER TIME FOR SEEDING

Is one of the most variable elements involved in the problem of seeding, and can only be determined within pretty wide limits, at best.

Considered without reference to exceptional cases, adventitious circumstances, or necessities of climate, we are decidedly partial to the old maxim, "Take time by the forelock," and therefore declare boldly in favor of *early* planting; inasmuch as the farmer thereby avoids that hurry and bustle of a necessarily busy season, which is almost sure to result in the half-doing of a portion of other work which belongs to it; because it gives him more time for thorough after-cultivation; and because it is more likely to insure a perfect growth and development of the plant.

In the milder climates the difference of a few days is usually a matter of but small importance; but in the higher latitudes, where the seasons are short and often hardly competent to the maturing of the crop, it becomes a question of great practical moment—one, indeed, upon the decision of which not unfrequently the success of the harvest depends.

So far as climate or season is a modifying circumstance, the general rule in the colder latitudes, for those crops to be planted

and gathered within the same year, should be: *Plant as early as the soil can be properly prepared;* or, in other words, when the earth has been so far *warmed* and *dried* by the vernal sun as to insure the germination of the seed and to allow the requisite stirring of the soil without danger of making it sodden and lumpy.

If we were to discuss the question more narrowly, we might suggest that the *nature of the soil and of the seed* are modifying circumstances worthy of consideration. Thus, a sandy soil, a sandy loam, or even one whose subsoil is gravelly, with a predominance of loam in the surface, could be safely seeded much earlier, and consequently when wetter and colder, than one in which there was a large proportion of clay—not only because the former varieties of soil would naturally dry and warm more rapidly than the latter, but likewise for the reason that they would be less injured by stirring when wet. Again, the *nature of the seed* must be taken into the account, since some are hardy and able to bear long continued cold and wet, while others would lose their power to germinate, and even decay entirely in a very short time when thus circumstanced. Wheat, for example, will suffer more moisture, without injury, than either rye, barley or buckwheat; while all of these, are superior in this respect to the finer garden seeds.

The practice of early planting finds further support in the fact, now pretty generally acknowledged, that the disease known as *rust* is less likely to attack grain crops *early* sown, and that, in case it does, it is less destructive, for the reason that at the time of its usual attack, the berry of the grain will have advanced so far in its development as to be, to some extent, out of its reach. The same course of reasoning also applies to the depredations of certain insects.

The once grave, but now thought-to-be unimportant question of *lunar* influence (albeit there are many self-supposed very wise farmers who still conduct *all* their operations by the moon) we do not propose to discuss. Simply this we will say: Darkness is favorable to germination, but not so *immensely*

essential, over and above that which is secured by the covering of earth, as to justify the farmer in setting up either the *new* or the *old* of the moon as a circumstance of sufficient importance to outweigh every other consideration. If when the other conditions are present there should happen to be a new moon or *no* moon, go ahead, and if *otherwise*, *go ahead*. As we have said before, the moon has many important offices to fulfill, but is, *by no means sole mistress of mundane affairs!*

In conclusion, as to time, for the benefit of beginners in farming, who may not yet be entirely familiar with the approved limitations of even all the more common field crops grown, we have prepared the following table, which will be found sufficiently reliable for the latitude in which we live :

Name of Seed to be Sown.	Time for Sowing, indicated by S.							
	March.	April.	May.	June.	July.	August.	Septem.	October.
Spring Wheat,	S	S	....	....	....	....	....	....
Winter Wheat,	....	....	....	....	....	S	S	S
Spring Rye,	S	S	....	....	....	....	....	....
Winter Rye,	....	....	....	....	....	S	S	S
Spring Barley,	S	S	S	....	....	....	....	....
Winter Barley,	....	....	....	....	....	S	S	S
Buckwheat,	....	....	....	S	....	....	....	....
Corn,	....	....	S	S	....	....	....	....
Millet,	....	....	....	S	....	....	....	....
Sugar Cane,	....	....	S	S	....	....	....	....
Oats,	....	S	S	....	....	....	....	....
Red Clover,	S	S	....	....	....	S	S	S
White Clover,	S	S	....	....	....	....	....	....
Timothy,	S	S	....	....	....	S	S	S
Hungarian Grass,	....	....	S	S	....	....	....	....
Kentucky Blue Grass,	....	S	S	S	S	....	....	....
Red Top,	....	S	S	....	....	....	....	....
Peas,	....	S	S	....	....	....	....	....
White Beans,	....	....	S	S	....	....	....	....
Turnips,	....	....	....	S	S	S	....	....
Mangel-Wurzel,	....	S	S	S	....	....	....	....
Carrots,	....	S	S	....	....	....	....	....
Parsnips,	....	....	S	S	....	....	....	....
Beets,	....	S	S	S	....	....	....	....
Onions,	....	S	S	....	....	....	....	....
Potatoes,	....	S	S	S	....	....	....	....

THE QUESTION OF QUANTITY

Is more easily settled, though there is by no means a unity of theory or uniformity of practice, the world over, in respect to how much of any given kind of seed should be sown to the acre.

Plausible arguments array themselves in favor of both sparse and thick sowing. One party maintains that a *full* seeding affords security against the failure liable to result from an intermixture of worthless seed, or bad seeding, as also from unfavorableness of season, partial destruction of insects, &c., &c.; that the thick standing grain prevents weeds from growing, and, for all the reasons enumerated is sure to yield a larger crop. The other party answers these arguments by declaring there is no excuse for either worthless seed or bad seeding; that the season is quite as apt to favor one system as the other; that the dwarfed and sickly growth of plants crowded together is sure to *invite* the *attacks* of *insects*, and, for a like reason, allow a rank growth of weeds—and then proceeds to adduce other and positive arguments in favor of "a *moderate* quantity of seed." Of these the most weighty is the universally recognized principle of vegetable physiology—that every plant, in order to its most healthy growth and perfect development, requires a sufficient area of the soil for the roots to supply themselves with all needed food, and space enough between the stems to insure the full work of sunshine and air. It is also —and truthfully—asserted that, in case there should be a slight deficiency of seed, nature will make up for it by putting out "suckers" and thus filling up the space to the full extent of her capacity to supply the requisite materials for growth.

Thus stand the arguments *pro* and *con*, and the question, taking practical and definite form, reiterates itself: Of *thick* sowing and *sparse* sowing, which is the best?—to which we make the paradoxical answer, *neither* and *both*. By this we simply mean, that first *extremes* are not well in matters of seed-sowing any more than in other things; and, secondly, that it is

not safe to follow arbitrary rules without reference to modifying circumstances. For crops intended as forage—the grasses, for example—and therefore usually cut before the seed has matured, we would sow pretty thickly, so as to insure the greatest weight and the most edible fodder to the acre. For crops grown for the seed principally—as wheat, rye, oats, barley, &c.—and yet not cultivated during growth, we would sow neither thickly nor yet sparsely, but rather with a *moderate* quantity of seed—as much as would probably result in the largest yield and best possible *quality* of the *grain*—the exact amount to be determined in each case by the strength of the soil, the favorableness of the climate to that particular species of plant, &c., &c. While for crops requiring thorough cultivation and a good deal of sunshine, in order to their healthy growth and perfect maturity, we would favor what the advocates of "*full* seeding" would denominate "*sparse* sowing."

These are the best general rules that we can give, and the following table of quantity is the result of our own observation and experience, as corrected by the experience of others:

SEED SOWN.	lbs. pr b'sh	BROADCAST.	IN DRILLS.
Wheat,..	60	1½ to 2 bush.	1 to 1¼ bush.
Rye,..	56	1 to 2 "	1 to 1½ "
Barley,	48	2 to 2½ "	1½ to 2 "
Buckwheat,..	42	1 "	¾ "
Corn,	56	.....	4 to 6 qts.
Millet,..	50	¼ to ¾ "	.....
Sugar Cane,..	45	.....	1½ to 2 qts.
Oats,..	32	2 to 2½ "	2 to 3 bush.
Red Clover,..	60	10 to 12 lbs.	8 to 10 lbs.
White Clover,	56	10 to 12 "	8 to 10 "
Timothy,	46	¼ to ½ bush.	.....
Hungarian Grass,..	50	⅓ to ½ "	.....
Kentucky Blue Grass,..	14	2 to 2½ "	.....
Red Top,..	14	¾ to 1¼ "	.....
Peas,..	60	2 to 3 "	1½ to 2¼ bush.
White Beans,..	60	.....	8 to 12 qts.
Turnips,..	..	1 to 1½ lbs.	¾ to 1¼ lbs.
Carrot,..	..	.....	2 to 2½ "
Parsnip,..	..	.....	3 to 4 "
Beet,..	..	.....	2½ to 3½ "
Onion,	..	.....	1½ to 2 "
Potatoes, (whole)	..	.....	15 to 20 bush.

How much allowance is made in England for poor seed, bad sowing, and after-thinning we are not aware; but the quantities of seed recommended by their authorities are certainly greater than is necessary with us, provided the seed, the sowing and the cultivation are what they ought to be. And, on the other hand, we are acquainted with many farmers in this country who—with their bad system of cultivation or rather their total *neglect* to cultivate—use as much *too little* seed as others use more than is necessary.

But whatever the theories maintained by the advocates of the lesser and greater quantity of seed, it cannot be denied and must not be forgotten, that the decision, in any given case, must have direct reference to the goodness of the seed, the skill and carefulness of the sower, the favorableness of the soil, as to texture, temperature, moisture and fertility, and to the earliness or lateness of the season. Therefore it is, that we insist upon attention to these important conditions and deprecate any blind adherence to arbitrary rules.

HOW DEEP SHOULD WE PLANT?

Several years ago a number of scientific gentlemen of Edinburgh instituted a series of experiments, with a view to determine the best depth for covering a variety of the seeds of grasses; the conclusion from which was, that much of the seed of all sorts is lost, by placing it so deep in the soil that it cannot germinate. Thus red clover, timothy, and a good many other varieties of grass-seed, would not sprout at all if buried two inches deep; white clover, rough-stalked meadow grass, if buried but an inch and a half deep, and a few if but one inch. This series of experiments further proved, that of thirty-three varieties only two—*beach grass* and *sainfoin*—should be covered *as deep as one inch*, and that a large proportion of the remainder germinated best at the depth of but *one-fourth of an inch!*

Such being the case, we submit it to our readers whether many of them do not actually kill a considerable proportion of their seed by covering too deep.

As a rough, general rule, seeds should be planted at a depth proportionate to their size. It must be understood, however, as being *very* general, and as having many exceptions. Wheat, for example, though the kernel is small, will *bear* almost as deep planting as potatoes; its proper depth, however, is about two inches, while potatoes, except under unusually favorable circumstances, require a depth nearly twice that.

But here, too, as well as in the matter of quantity, the conditions must be inquired into, and corresponding modifications be made of the general rule. For example, it is clear, that if the soil be tenacious and the season wet, it would be ruinous to plant the seed very deep, as it would be "drowned out;" and equally evident that the opposite conditions of soil and weather would *imperatively demand* that it be placed at considerable depth. The circumstance of weather is, of course, a very variable and uncertain one, but the quality of the *soil*—its texture, retentive power for moisture, its power to absorb heat, the quality of its natural or artificial drainage, &c.,—should always be taken into the account, and may be calculated upon with absolute certainty. The peculiarities of different seeds as to the conditions involved, should also have due consideration. Some have the ability to live and flourish in, and even require a watery bed; some are indifferent to the circumstance of moisture, seeming to care but little whether the soil be wet or dry; and others will decay before the germ gains independence of the seed, unless the soil be quite dry. All these matters are of great importance.

Uniformity of depth for the seeds of the same sowing is very important, for two reasons: First, because there is a *particular* depth at which each species of seed will do better than at any other; and, secondly, because simultaneousness of germination and identity of condition are essential to uniformity of growth in the plants and to simultaneousness of maturity. More of this under the head of *means*.

DISTANCE APART.

This is, in part, a question of quantity, but also involves the

matter of *relative position*, together with the *means employed*, and therefore requires a separate discussion.

Except as modified by the variable circumstances of richness of soil and favorableness of climate and season, there must be a definite distance—determinable only by observation and experience—at which the plants of every species will grow more thriftily and mature more perfectly than at any other. The exact distance, then, is certainly a *desideratum*. Of course it is impossible for us to supply a rule which will be absolutely correct; we shall not attempt it. Absolute correctness for the average of seasons can only be determined by the farmer himself, after due investigation into the nature and capacity of his soil. A table of distances for the more common drill and hill crops, calculated for soils of an average fertility, may, however, be convenient for the reference of the more inexperienced, and such an one is accordingly furnished. Different cultivators will, of course, discover many particulars in which they would amend it; still sufficient reference has been had to the known nature of the plants enumerated, and to the average of soils, to ensure a close approximation to correct distances:

	Distance betw'n rows.	Distance in inches between the plants in rows.	Distance betw'n hills.
Wheat,	10 to 12 in.	5 to 6	.....
Rye,	8 to 10 in.	4 to 5	.....
Barley,	8 to 10 in.	4 to 5	.....
Oats,	8 to 10 in.	4 to 5	.....
Corn,	3 to 4 ft.	12 to 18	3 x 4 ft.
Sugar Cane,	3 to 4 ft.	12 to 18	.....
Potatoes,	3 .... ft.	12	$2\frac{1}{2}$ x 3 ft.
English Turnips,	$2\frac{1}{2}$.... ft.	12 to 18	.....
Swedish Turnips,	$2\frac{1}{2}$.... ft.	12 to 18	.....
Mangel Wetzel,	$2\frac{1}{2}$.... ft.	12 to 18	.....
Beets,	$2\frac{1}{2}$.... ft.	12 to 18	.....
Carrots,	12 to 18 in.	8 to 10	.....
Parsnips,	12 to 18 in.	8 to 10	.....
Beans,	3 .... ft.	18	2 x 4 ft.
Peas (small)	$3\frac{1}{2}$.. ft.	2 to 3	.....
Peas (large),	4 to 5 ft.	4 to 5	.....

It is the custom with some to plant much nearer than recommended above, with the view of "thinning out" after the plants shall have demonstrated their capacity or incapacity to make a vigorous growth. But inasmuch as the practice has grown out of either a want of confidence in the seed, or very imperfect and unreliable means of planting—to neither of which any sensible, enterprising farmer will submit for a single season—we have entirely ignored it in our general directions.

NUMBER OF PLANTS THAT CAN BE GROWN UPON ONE ACRE AT GIVEN DISTANCES.

Again, as it is often convenient to know, without the trouble of making the estimate, just exactly the number of plants that may be grown in a given field at a certain distance apart, we herewith publish the results of a series of calculations ranging between *one inch* and *forty feet*. The first column of figures indicates the distances of the plants apart, and the second column, directly opposite, the number of plants, at such distance apart, that can be grown upon one acre :

1 inch	6,272,640	8 feet	680
2 do	1,568,160	9 do	525
3 do	696,960	10 do	435
4 do	379,540	11 do	360
5 do	250,505	12 do	302
6 do	174,295	13 do	257
7 do	128,013	14 do	222
8 do	98,010	15 do	184
9 do	77,440	16 do	170
10 do	62,726	17 do	150
11 do	51,840	18 do	134
12 do	43,560	19 do	120
1½ feet	19,360	20 do	108
2 do	10,899	21 do	98
2½ do	6,969	22 do	90
3 do	4,840	23 do	80
3½ do	3,535	24 do	75
4 do	2,722	25 do	69
5 do	1,742	30 do	48
6 do	1,210	35 do	38
7 do	888	40 do	27

OF THE METHOD.

The next and last question of interest, touching the matter of seeding, relates to the *method*. Briefly stated, it is this : Shall we sow *broadcast*, in *drills*, or plant in *hills* ?

Each of these methods has the sanction of good agriculturists in all ages, and has had the benefit of numberless discussions and experiments; still the question is not fully settled in the minds of a majority of the farmers of to-day. Surely, if there *is* a best method, the farmer ought to know what it is. We have no patience with this blundering, hap-hazard way of doing business—this doing things because most people do them, when every new improvement proves that the whole world had been going wrong in all time before.

PLANTING IN HILLS.

This was undoubtedly the *primitive* method—the one which would naturally be adopted in an age when thorough plowing, and harrowing, and cultivation were unknown. The early historic records contain allusions to it, and even down to within comparatively modern times, for those crops ever planted in hills at this day, it was almost the only method in use. It is certainly meet, therefore, that we pay it proper respect. The new ways are not *always* the *best* ways; every reader of history is probably aware of that. We mean to say, things must neither be laughed at because they are *old*, nor be adopted because they are *supposed to be new*.

For some crops, planting in hills is still, and probably ever will be, the best method. Plants whose roots go out some distance in search of food, and cannot be adequately supplied within small compass, whose foliage is large and must occupy considerable space, and whose necessity is imperative for frequent and thorough cultivation, belong to this class.

Indian corn is an example; and we are not surprised to find the farmers of the corn-growing States coming back to the old-fashioned "check planting" in hills, 3 x 3 and 4 x 4, not to *hand*-planting, of necessity, for there is no reason why we should not have machinery for this as well as for everything else.

Other plants belong to this same category, but we will not stop to enumerate them. There are many crops, however—the

small grains, particularly—which require the seeds to be some nearer together than it would be convenient to plant them with the hand; for the sowing of these there are two methods in common use:

BROADCASTING AND DRILLING.

It is certainly a decision of common sense, that, on either *very stumpy* or *very uneven land*, seeding can best be done by the careful hand, after the broadcast method. These are the only cases, however, in which we are able to discover that it has the advantage; unless it be in that other case, when the farmer is too poor to buy a good drill, or cannot wait for its manufacture or importation. While, on the other hand, very serious objections, both in theory and in practice, arise against it.

In the first place, broadcast seed-sowing is a difficult work, requiring that skill which can only come of a natural aptness, cultivated by considerable experience. Now, it often happens that the farmer has neither the original aptness or the requisite experience to ensure a good and economical doing of the work; nor if he had them, would it follow that he would, himself, always have leisure or be able to attend to it; in which case, this most particular work done on the farm must be intrusted to some blundering day-laborer, whose interest it is to assume to understand it whether he ever sowed a rood of land before or not, and whose chief care is to get the seed out of his hand, and thus have done the seeding *somehow* and *within the prescribed time*.

Secondly, this method of sowing is quite impracticable in windy weather, as the seed will be blown out of line, and a portion of it fall in the wrong place in spite of the most skillful sower.

Thirdly, under the most favorable circumstances of skill and weather, it is impossible to get the seed perfectly distributed upon lumpy or stony ground; since falling upon these hard bodies its inevitable rebound must carry it where it is not wanted.

Fourthly, it being granted that the seed has been evenly and in proper quantity distributed, the work is still but half done, i. e., it is yet to be *covered*, and so the field must all be traversed again; and thus, time, so precious at the season of seeding, is wasted.

In the fifth place, there can be no guaranty that the seed will *all* be covered, no matter how careful the harrower: the fowls of the air and vermin of various species will probably destroy a portion before it is possible to cover it up. Or, there may come a storm just as the sowing is done, driving the harrower from the field and preventing his completion of the work until a re-sowing may have become necessary.

A sixth objection is found in the utter impossibility, even with the most favorable conditions, of giving the seed a uniform depth of covering; the importance of which we have discussed under its proper heading. Some will be found too deep for germination, and others will get no covering at all.

As a seventh objection, the soil is liable, if heavy and a little wet, to be packed down too heavily by the harrow which covers the seed.

Finally, the irregular sprouting and uneven, helter-skelter growth of the plants, and consequently restricted influence of proper space, air, and sunshine, must occasion want of uniformity in the time of flowering and maturing, &c., and necessarily result in a crop inferior both in quantity and quality.

Here are eight sound, invincible reasons why broadcast sowing should not be practiced, provided a better method can be substituted. *We* believe that *drilling* is that better method, and accordingly proceed to a statement of the following substantial reasons—not doubting that, inasmuch as we have no selfish reason under heaven for offering them, they will be candidly and fairly examined by the thousands of interested farmers under whose notice this article may fall:

First, because not one of the foregoing eight objections can with any degree of propriety be urged against it; and, secondly, because there are other and important reasons, not enumerated, that may be urged in its favor, to-wit:

1. A well constructed drill is susceptible of adjustment so as to enable the farmer to plant his seed at different depths, corresponding to the differences which may characterize the soils of different fields, or of different portions of the same field, as suggested under the head of "Depth."

2. The tooth of the drill which deposites the seed, at the same time, clears out of the way all hard lumps and stones, so that the seed is left in the finest tilth the soil can afford; while the harrow must bury some of it under them.

3. The drill leaves the seed in regular rows, so that the plants, when grown, may have the benefit of a more perfect circulation of air and access of sunlight. This is a matter of great moment during spells of warm, "muggy" weather, and may often be the occasion of saving the crop from mildew and rust.

4. This same row arrangement allows of that thorough cultivation of a variety of hitherto neglected crops, which we are glad to know are beginning to be popular, and are bound to become *universal*.

5. When sown with a drill, the seed lies at the bottom of a little furrow, which serves the double purpose of draining the land in a wet time, and of securing a covering for the otherwise naked roots of the tender plants in the winter and spring, through the natural crumbling down of the little ridges on either side as a result of freezing and thawing. This is also important and not unfrequently prevents "winter-killing," a most prolific source of the failure, in these northern latitudes, of nearly all fall sown crops.

6. By means of the drill the farmer in enabled to sow *mixed seed* much more perfectly than is possible with the hand; and all at the same time.

7. The drill affords an admirable means for applying various kinds of manure to the soil just when and where they are calculated to do the most good. Lime, ashes, plaster, bone-dust, powdered manure from the hennery, &c., as well as the guano,

so common in the East, can be applied most perfectly, and almost without extra labor or expense.

8. The drill saves one-fifth to one-fourth of the seed; often enough in one season to pay for the machine.

9. It ensures a more uniform ripening, so that the harvest may begin at the earliest moment; thereby confining the ravages of insects, should any attack the crop, to a narrower limit of time; often, also, enabling the crop to escape other forms of the blight, and obviating the loss which must otherwise result from the shelling out of that portion which must become too ripe while the remainder is maturing.

Now, some of the reasons above enumerated are double, so that if we make a summary of the whole series of arguments, we shall have the surprising array of *nineteen independent and important reasons why it is better to sow in drills than broadcast!*

1. Drilling requires much *less skill.*
2. It requires *less time.*
3. It requires *less labor.*
4. It requires *less seed.*
5. It can be well done *in spite of windy weather.*
6. It insures a more *even distribution of the seed.*
7. It insures the covering of *all* the seed.
8. It insures the covering of the seed at the *proper depth.*
9. It *facilitates the sowing of mixed seed.*
10. It *insures the covering of the seed with the best earth.*
11. It *obviates the "packing" of too heavy soils.*
12. It *facilitates the application of fertilizers.*
13. It leaves furrows, and thus *promotes drainage.*
14. It *diminishes the danger of winter-killing.*
15. It *lessens the injury by drouth.*
16. It *provides for convenience of cultivation.*
17. It *secures better airing and sunning of the plants.*
18. It *insures a more uniform ripening.*
19. IT INSURES A LARGER AND BETTER CROP.

COMMUNICATIONS.

THE PENOKEE IRON RANGE.

BY I. A. LAPHAM, OF MILWAUKEE.

DR. J. W. HOYT,

Secretary Wisconsin State Agricultural Society:

DEAR SIR:—In compliance with your request that I furnish a paper of some description for the Fifth Volume of the Transactions of the Wisconsin State Agricultural Society, I herewith forward to you a communication concerning the Penokee Iron Range.

Where and what is the PENOKEE IRON RANGE—I think I hear the reader exclaim; and it is my present purpose to answer this question, and to make known some important facts in regard to this remarkable Range, and the little known and almost unexplored part of our State of Wisconsin where it is found. It is no credit to the citizens of a State to be obliged to confess ignorance of its geography, its physical features, its resources, animal, vegetable, and mineral. While we are sufficiently posted in regard to the vast deposits of iron in Michigan, in Missouri, and even in Sweden, how few of us realize that there are equally magnificent deposits within our own borders.

Let us therefore take the first steam boat bound for Lake Superior, this largest and finest body of fresh water in the whole world; let us pass by the many things of interest at Mackina, at the Sault de Ste. Marie, and even the rich copper mines of Kewenaw and Ontonagon; passing all these, we will

make our first stop at La Pointe, the county Seat of La Pointe county, in Wisconsin. Here you will find the remains of an ancient settlement, missionary station, and trading post. Here is one of the finest and safest natural harbors on the lake, being the little circular bay between the southern extremity of Madaline Island and the main shore, completely land-locked, and protected from the effects of storms from any and all directions. The village is built upon the Island, fronting directly upon this little bay, and opposite the much larger one with its long aboriginal nome—Cheguamegon. This last bay is separated from the smaller one by a long, narrow "spit," or bar of sand, partially covered with trees, the extremity of which gives name to the place—The Point. If you are curious to know the geology of the locality, you will find the red sandstone cropping out along the shores, surmounted by a thick deposit of the red marl which is so common about nearly all these upper lakes. This marl becomes light-colored on exposure to the air and the rains; it is found, upon chemical examination, to contain a considerable share of calcareous matter, which is the secret of its making a very good soil when properly treated—pulverized and turned over with the plow. The finest garden vegetables are raised here; and wheat, rye, oats, and barley would do well. The waters abound in fish, which attain their greatest excellence in the pure element of Lake Superior.

In the absence of railroad and steamboat accommodations, we must accept an invitation to take a sail in a small boat up the beautiful bay of Cheguamegon to the newly established village of Ashland. The wind being favorable, the voyage is a very pleasant one; the pure air is invigorating; and we almost wish the wind would cease, so that we may ply the nimble oar. As we pass Stony Point on the right, we shall see all there is of the town of Houghton, to wit: one house and a steam saw-mill. It may yet become a place of importance. At Ashland, the southern extremity of the bay, we will doff our coats, substituting red flannel shirts well supplied with pockets; draw on our "overhauls;" provide ourselves with blankets, provis-

ions, and cooking utensils, to be carried by a packer in a large bundle on his back, and we are ready for a tramp through the dense forest, mostly of evergreen trees, to the Penokee Iron Range, whose distant summits we have already seen towards the south-east from La Pointe. I carried with me, as usual on such occasions, a tin box for collecting botanical specimens, and a mineral hammer.

Though there is as yet no proper road for us to travel, there is a very good trail, so that we were saved much of the labor and hardship encountered by the first explorers in this interesting part of our State. A distance of six miles over a gently rising plain, brings you to the Maskeg (now called White river) branch of Bad river. It runs through a valley, which it has cut for itself out of the red marl, to the depth of a hundred feet or more. The trees you pass are pine, hemlock, balsam, arbor-vitæ (called white cedar), tammarack, with occasionally poplar and birch. The bark of the white cedar may be taken from the trees in large pieces and is applied to various useful purposes. It is employed to make an out-side covering to log houses, thus keeping out much of the winter cold; surveyors and others use it to make temporary coverings for the night in lieu of a tent. The bark of the balsam tree is swelled into numerous little protuberances, within which is the aromatic gum so extensively known as "Canada balsam," and which gives name to the tree. Here the sandstone shows itself again, interlaminated with thick beds of soft red shale, the disintegration of which by former geological action has given rise to the red marl so abundant along the lakes.

At the distance of about twelve miles from Ashland we pass the Marangowin, another of the western branches of Bad river, at a place where a farm has been opened. A stalk of oats grown here measured five feet nine inches high; and a pine tree we found to be thirteen feet in circuit, four feet above the ground. The soil on the river bottom is sandy, but rich and very productive. At the base of many of the trees, we found large quantities of small chips, that had been thrown down by "the

borers"—the grub or larva of some Coleopterous insect that must be very abundant here. If you sleep in a log house with your head near the wall, you will be quite apt to be disturbed by the continued noise of these industrious creatures. Other insects found here are called "sawyers," from their method of cutting, which resembles that of the saw.

Beyond the Merangowin branch there are no agricultural settlements. The same kinds of trees continue for several miles, though occasionally an elm, or a sugar maple is added, and the surface becomes covered with the ground hemlock, an evergreen shrub, whose low, entangled branches, will be very apt to bring you prostrate to the ground. Soon we encounter some low ranges of hills, known respectively as "the Copper range," where there are only some indications of copper; the "Granite range," and the "Conglomerate range;" the ground is more uneven; the red marl disappears, its place being occupied by a brown and black soil; the trees show a larger proportion of the hard-wood kinds; and you will, at the distance of twenty-three miles from the waters of the lake, find yourself at the base of a lofty range, rising abruptly from the comparatively level country around—like the Rocky Mountains from the great plains over which they are approached—and this is the PENOKEE IRON RANGE.

This remarkable mountain range has been traced from a little east of the Fourth Principal Meridian in township forty-five, in a direction a little south of west, across three ranges of townships; its length being about twenty miles, as shown on the accompanying map. At the west the range appears to slope down and terminates, but towards the east, its extent is not known. The highest summits are about twelve hundred feet above Lake Superior, or eighteen hundred feet above the sea; the mean height is one or two hundred feet less. Tyler's Fork crosses the range at a place called "The Gorge," and Bad river crosses at Penokee, through a gap cut down to a depth of about three hundred feet; the river here having an elevation above Lake Superior of six hundred and sixty-eight feet.

On the north side the slope of the range is moderate, and covered with "Drift;" but on the south it is quite abrupt, and steep, rocky precipices occur, looking as if they had at some remote period of the past, formed the shores of some great body of water.

What gives this great ridge its peculiar interest and importance, is the immense stratum or bed of magnetic iron ore which it contains, extending, with varying thickness and value, throughout its whole length. It is not therefore an Iron Mountain simply, like those heretofore known in Missouri and elsewhere; but, as its name imports an Iron Range; as if mountain masses of iron had been passed between gigantic rollers, and drawn out for a length of twenty miles. The ore is found in a very ancient chloritic state, so ancient that it is supposed to have been deposited long before the existence of vegetable or animal life upon the globe. The slate rests upon a light colored quartz-rock, which usually extends to the base of the Range on the south side. The ore is laminated like the slate and apparently has had the same origin; for as we ascend from the quartz-rock, the slate becomes more and more ferruginous until it passes into pure iron ore. This change is so gradual that it is often difficult to determine where the slate ceases and the ore begins; or how much should be classed as iron ore and how much as ferruginous slate. We noticed places where the ore had a thickness of *sixty feet;* at other places ten; and wherever we could get access to the rock at the proper place, the ore was found.

Above the ore, that is north of it, the slate has been hardened, probably by some volcanic agency, into a compact mass, but still showing traces of its original laminated structure. This highly indurated rock is the nucleus of the ridge, usually forming the crest or highest part; and it forms the north slope, except where covered with the boulders and other coarse materials of the Drift formation. If we may judge from the polished and grooved surfaces, we may suppose that this excessvely hard rock has resisted the action of the powerful currents and

icebergs that once flowed over the very top of the ridge; which with its invaluable beds of iron ore was thus saved from destruction.

All the rocks, including the ore, have a considerable dip towards the north, or towards the great basin of Lake Superior; and they are always found in the same relative position in regard to the ore. If we, at any new locality, could find either of the rocks in place, we at once knew which way to turn to find the ore.

The magnetic ore of the Penokee Iron Range contains a notable and much varying proportien of silica in its composition, but is free from sulphur and other deleterious qualities—corresponding in this respect with most of the iron ores of this remote geological epoch. It is in some localities so highly magnetic that particles adhere to the hammer when struck, like iron filings to a magnet; and the compass needle as often pointed towards the east or west, as to the north; in one instance being entirely reversed, the north end pointing to the south. At Penokee, where Bad river crosses the Range, the ore exists in such abundance that it may be obtained from the face of the hill, much as stone are taken from an ordinary stone quarry.—Large masses that have fallen from the cliffs, now lie loose upon the surface, and will supply a furnace for many years, before it will be necessary to resort to the original bed.

The route has been surveyed for a railroad from the navigable waters of Lake Superior, at Ashland, to the gap in the Range at Penokee, and found to be entirely feasible. The length is only twenty-three miles; and no serious obstacles are to be encountered. A company has been incorporated by the Legislature with full power to construct the road, and also to mine the ore and manufacture iron. The general direction of this railroad is such as to connect with the Milwaukee and Horicon road, now completed as far as Berlin, and which is destined to be extended up the valley of the Wisconsin river, and thence to some point on Lake Superior.

The soil on the Range is much deeper and of better quality

than that on the lower grounds, and sustains a different growth of timber; about nine-tenths of the trees being hard maple.—These trees are of good size and vigorous growth, and might be made to yield a large amount of sugar annually. Vegetable mould or soil appears to accumulate here, as in other places; while over a large share of the Lake Superior country there seems to be some cause operating which is unfavorable to such accumulation. What this cause can be I am unable to decide; but the fact is quite evident.

The range is so densely and completely covered with forest trees and shrubs, that it is difficult to obtain a distant view from the summit, except at a few favorable points. Here the prospect, especially towards the south, is very fine, extending over a vast undulated plain, bounded by higher grounds beyond—the whole apparently covered pith a dense forest of timber.

The following is a full list of the trees and shrubs found by me about the Penokee Iron Range, and at La Pointe:

1. Hypericum prolificum, Linn. St. John's wort.
2. Hypericum ellipticum, Barton.
3. Tilia Americana, Linn. Bass-wood.
4. Rhus typhina, Linn. Sumach.
5. Ampelopsis quinquefolia, Michx. Virginia Creeper.
6. Acer spicatum, Linn. Mountain Maple.
7. Acer saccharinum, Wang. Sugar Maple.
8. Acer rubrum, Linn. Red Maple.
9. Prunus Americana, Marshall. Wild Plum.
10. Prunus pumila, Linn. Dwarf Cherry.
11. Spiræa salicifolia, Linn. Meadow Sweet.
12. Potentilla tridentata, Ait. Mountain Cinquefoil.
13. Rubus Nutkanus, Mocino. White-flowering Raspberry.
14. Rubus triflorus, Richardson. Dwarf Raspberry.
15. Rubus strigosus, Michx. Red Raspberry.
16. Rubus villosus, Ait. Blackberry.
17. Rosa Carolina, Linn. Swamp Rose.
18. Rosa stricta, Lindl. Wild Rose.
19. Cratægus coccinea, Linn. Scarlet-fruited Thorn.
20. Pyrus arbutifolia, Linn. Choke-berry.
21. Pyrus Americana, D. C. Mountain Ash.
22. Amelanchier Canadensis, Torr. & Gray. June-berry.
23. Ribes Cynosbati, Linn. Wild Prickly Gooseberry.
24. Ribes hirtellum, Michx. Smooth Gooseberry.
25. Ribes floridum, Linn. Wild Black Currant.
26. Aralia hispida, Michx. Bristly Sarsaparilla.
27. Aralia nudicaulis, Linn. Wild Sarsaparilla.
28. Cornus Canadensis, Linn. Pudding berry.
29. Cornus cercinata, L'Her. Round-leaved Dogwood.
30. Cornus sericea, Linn. Kinnickinnick.
31. Linnæa borealis, Gronov. Twin-flower.
32. Lonicera flava, Sims. Yellow Honeysuckle.

33. Lonicera ciliata, Muhl. Fly Honeysuckle.
34. Diervilla trifida, Mœnch. Bush Honeysuckle.
35. Sambucus pubens, Michx. Red Elder.
36. Viburnum dentatum, Linn. Arrow-wood.
37. Viburnum Opulus, Linn. High-bush Cranberry.
38. Gaylussacia resinosa, Torr. & Gray. Black Huckleberry.
39. Vaccinium Canadense, Kalm. Blueberry.
40. Chiogenes hispidula, Torr. & Gray. Creeping Snowberry.
41. Epigæa repens, Linn. Trailing Arbutus.
42 Gaultheria procumbens, Linn. Winter-green.
43. Cassandra calyculata, Don. Leather-Leaf.
44. Andromeda polifolia, Linn.
45. Pyrola secunda, Linn. One-sided Pyrola.
46 Fraxinus Americana, Linn. White Ash.
47. Fraxinus sambucifolia, Lam. Black Ash.
48. Dirca palustris, Linn. Leatherwood.
49. Ulmus fulva, Michx. Slippery Elm.
50. Ulmus Americana, Linn. Elm.
51. Quercus rubra, Linn. Red Oak.
52. Corylus rostrata, Ait. Beaked Hazle-nut.
53. Ostrya Virginica, Willd. Iron-wood.
54. Betula papyracea, Ait. Canoe-Birch.
55. Betula excelsa, Ait. Yellow Birch.
56. Alnus incanus, Willd. Alder.
57. Alnus serrulata, Ait. Black Alder.
58. Salix discolor, Muhl. Glaucus Willow.
59. Salix pedicillaris, Ph. Stalk-fruited Willow.
60. Populus tremuloides, Michx. Am. Aspen.
61. Populus grandidentata, Michx. Poplar.
62. Pinus Banksiana, Lambert. Scrub-Pine.
63. Pinus Mitis, Michx, Yellow Pine.
64. Pinus Strobus, Linn. White Pine.
65. Abies balsamea, Marshall. Balsam Fir.
66. Abies Canadensis, Michx. Hemlock.
67. Abies alba, Michx. White Spruce.
68. Larix Americana, Michx. Tamarack.
69. Thuja occidentalis, Linn. Arbor Vitæ. White Cedar.
70. Taxus baccata, Linn. (*Var. Canadensis.*) Ground Hemlock.
71. Smilax rotundifolia, Linn. Green Brier.

It will be seen that there is but one species of oak found in the Lake Superior region—the Quercus rubra, or Red Oak, which here finds its northern limit. Mr. J. D. Whitney informs me that during all the explorations of Isle Royale, only one tree of this species was found. Along the Range, we saw quite a number of full-grown Red Oaks, but no young trees or sprouts. From this we inferred, though perhaps hastily, that the family of oaks would soon become extinct here, as there are no young trees growing up to take the place of the older ones, when they become decayed and are gone.

Among the rocks and cliffs of the Range the botanist will find many things of interest, which will not be enumerated here. The broad flat lichen known to the old voyageurs as "*Tripe de*

Roche," was found; a plant that has probably saved some persons from starvation, though anything less would hardly induce one to eat of it. A beautiful little fragrant fern was found, which differed so much from the character given in the books of *Aspidium fragrans*, that I was induced to improve a favorable opportunity to send it to Sir Wm. J. Hooker, director of the Royal Gardens at Kew, near London, who writes that it is a variety of that species precisely identical with one he had himself found on the Caucassian Alps !

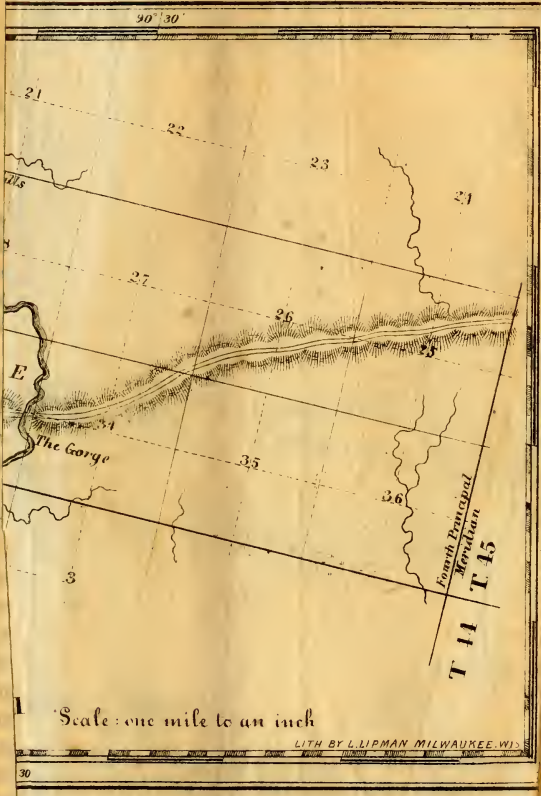
Among the wild animals still inhabiting this part of Wisconsin, not the least interesting is the beaver, whose existence was revealed to us by the trees that had been cut with its sharp teeth. One tree thus cut down was found to be nineteen and three-fourths inches in diameter; but those we saw on the banks of the Bad river, mostly of birch and maple, were from two to five inches in diameter. Many of these animals are annually caught by the Indians. They seldom build dams across streams, as in more remote regions, being of the variety called "bank beaver," that are contented to dwell on the banks of rivers and lakes.

An enumeration of the animals found here, large and small, would include the little black bat, a mole about the size of the common rat; two species of mice, neither of them the common domestic mouse; the thirteen striped gopher, so abundant in the south part of the State; the gray, red, and striped squirrel; the rabbit; the black bear, martin, fisher, mink, otter and weasel; the gray wolf, the red fox, and the cross fox, which is red with a stripe of black on his back and down his legs; the silver-gray fox, the lynx, and the musk-rat; the deer; the porcupine, very abundant about the rocks of the Range; the woodchuck; and as I was informed, last, though not least, the moose.

Thus it appears that we have, in the northern part of Wisconsin, a region abounding in undeveloped mineral wealth, with iron ores exceeding in amount perhaps any other in the world; copper has been found in some localities, and is believed by

many to exist in workable quantities, in the veins of the trap rocks, as in the adjacent parts of Michigan; the soil especially in the elevated lands, is found to be rich and very productive, supporting an abundance of timber, both of pine and the hard woods; the fisheries on the borders of the lake are valuable; many of the fur-bearing animals are still to be found there; and there are doubtless other resources which future explorations will soon make known. In general character the country is much like that of central Wisconsin, where so much pine lumber is annually produced. Some settlements already made show that the soil is productive, and the climate not unsuited to the culture of the various ordinary crops. Snow usually falls in autumn, before the setting in of the severe cold weather, and thus keeps the ground from freezing, and protects the tender roots of plants.

The lands have been recently surveyed, and subdivided into sections, so they are now subject to pre-emption, or may be purchased at the moderate minimum price fixed by the government. Measures should be taken without delay to ascertain and make known fully and accurately, the general character and resources of this part of the State. Thus would be corrected much erroneous opinion now existing in regard to it.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CONSIN

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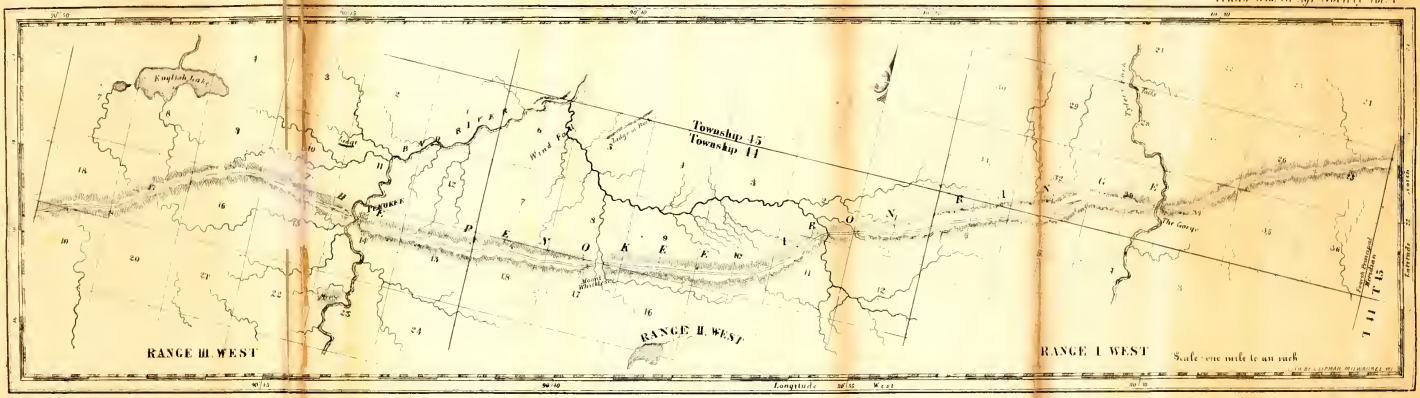
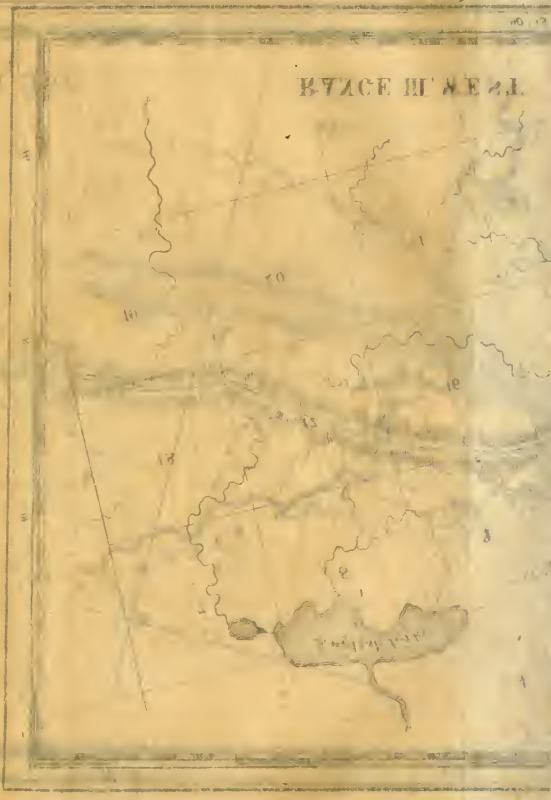


MAP OF THE PENOKEE IRON RANGE, *near* LAKE SUPERIOR - WISCONSIN

By I A Lapham



THE LUMBER TRADE OF GREEN BAY.

BY HON. CHAS. D. ROBINSON, OF GREEN BAY.

PROF. J. W. HOYT,

Sec. Wis. State Agr. Society:

MY DEAR SIR:—In the midst of pressing duties, I have responded to your request for an article on the Lumber Business. It is hastily written, without any attempt to give statistics, except such as my memory furnished—but the many demands on my time have prevented the preparation of anything more elaborate.

When the farmer, on the broad and rich prairies of Wisconsin, makes ready to set up his homestead and encompass round about his fertile acres, he mourns over the want of those majestic forests which shall furnish him the wherewith to do it. When the farmer, deep in the recesses of the Wisconsin pineries, wrestles with the trees and struggles for years among the stumps and roots, in carving out his farm, he thinks, often with a sigh, of the open lands southward, where Nature has made the ground ready for the ploughshare. But the owner of the prairie finds that the crops which come to him, at once, will buy, of themselves, the lumber needed to protect them; and the owner of the woodland finds that while he is slowly hewing his way through the woods, the trees themselves will buy the corn and the wheat needed to feed him until his own ground bears fruits. These are some of the elements of Wisconsin wealth. Her topographical features, whether fair or rugged, form a system of balances and compensation. The northern farmer is *ex-officio* a lumberman; the southern farmer, living in the "fat of the land," has more than he needs; and commerce thrives in bearing to and fro the fruits of the reaper and the

axe, which they all are in need of. It is not inappropriate, then, that some space in your Report upon Agricultural Affairs shall be devoted to the lumber trade.

The pineries of Wisconsin may be divided into four distinct sections. A large amount of lumber is manufactured in the Northwest part of the State, which finds its way out through the Chippewa, the Black, the St. Croix, and other rivers flowing into the Mississippi. The "Wisconsin Pinery," so called, lies along the Wisconsin river in the central part of the State. The lumber from that region also goes out mostly to the Mississippi market. The Wolf River Pinery lies in the valley of the Wolf and its tributaries. By the construction of new railroads, principally the Chicago and Northwestern, its lumber is now sent to the interior of the State upon the cars. The Green Bay Pinery includes all that region extending from Depere, seven miles up from the mouth of the Fox River, along both shores of the Bay northward to the upper waters of the Escanawba, which flows into Bay de Noquet, at the northern extremity of Green Bay. I will speak only of this Pinery, because it is the only one with which I am particularly familiar.

Its lumbering points—that is, where mills are located—are at Depere and Green Bay city, on the Fox River; Big Suamico, Pensaukee, Oconto, Peshtigo, Menomonee, Ford River and Cedar River, on the west shore; Bay de Noquet at the northern extremity of the Bay. Little Sturgeon Bay, Big Sturgeon Bay, on the east shore; and Chamber's Island, in the Bay. The whole number of mills at these points is about forty; and they have a total sawing capacity of about 130,000,000 feet per year. The depression in the lumber business for the past few years, however, has prevented a full business being done, and their aggregate sawing, for several years past, has averaged about 80,000,000 feet per year.

This is, as you see, an immense business. In prosperous times, when all the mills are running, from fifteen hundred to two thousand men are in active employment, sawing the lumber, rafting it, and floating it to the vessels. In the winter the

same men, with hundreds of teams, are at work in the woods, getting out logs, and finally, in the spring, when the streams open, running the logs down to the mills.

A logging camp in the winter is an exhilarating scene. The great trees falling, here and there, with a thundering sound; the fine, strong teams moving off to the river with their loads, and hurrying back with empty sleighs; the songs and shouts of the jolly, red-shirted lumbermen; and the majestic forest scenery, standing out so handsomely in the clear air of northern winter, make up a panorama that is worth going a day's journey to see. Finally the snow fades out before the spring sun. It goes first from the logging roads, because there it has been most worn; and then the lumbermen make ready for the "running," and wait impatiently for the breaking up of the stream, and the coming of the freshet. If they are a long way up the stream, this is a matter of great anxiety, for perhaps the rise will not be sufficient, and their logs will lie over until another year. One firm, on the Oconto, got logs as high up as ninety miles from the mouth. If the water is high, the logs come down by thousands upon thousands, rushing, clogging up, breaking away again, piling upon each other, and requiring the constant efforts of the drivers to keep them on the go. Sometimes, when an obstruction occurs, a few logs form a "jam," and those coming after them with terrific force, are piled up in rude masses that one not familiar with it would think the whole enterprise hopelessly ended, for there seems no possibility of ever extricating the mass, perhaps of a thousand logs. But a single man, with an iron-shod handspike, goes upon the jam carefully, looking with a practiced eye here and there, until he discovers one log which is the key to the whole problem. Prying cautiously, he loosens it, and then makes his way as quick as possible to the shore again. The confused mass begins to settle; the head logs start; and then, all at once, down stream they go once more, with the old speed, like a herd of countless buffaloes stampeding along the prairie. The logs reach the

mills in April and May—sometimes as late as June ; and the sawing commences on the arrival of the "head of the drive."

A mill which saws during the season five million feet of lumber, keeps three vessels carrying it to market. So that the Green Bay trade, in a prosperous season, has in constant service about a hundred vessels, averaging nine or ten men each. There are thus occupied in this trade nearly three thousand men, who, with their families, make up a population of, say, ten thousand—all of whom, with hundreds of teams, have to be fed from the prairie regions southward. These are significant facts, as affecting the agricultural interests of the State ; and yet it will surprise many readers to learn that scarcely a barrel of pork or flour, or a bushel of oats, consumed by all this force, comes from Wisconsin. Chicago is the great market for Green Bay lumber ; and Illinois produce is returned in pay for it—while the harvests of Wisconsin farmers are sent East, to be sold for less prices than they would get here.

The extension of a railroad northward, into the Green Bay pineries—for instance, the Chicago and North-Western—affording lumbermen a reliable communication, at all seasons of the year, with the fertile farming regions of Southern Wisconsin, would at once produce a revolution in all this great trade ; and Wisconsin would then reap the benefit of Wisconsin enterprise and labor. Our own farmers would find the pineries, and our lumbermen would find the farms, moved so near together as to be within hail of each other ; and instead of the exhausting effect of the present state of things, our State would grow and prosper from her own industry.

Another thing : there is comparatively very little farming done in the lumber region. The country is rugged ; there are few roads ; and to a man in search of a farm it looks like the work of a lifetime to acquire a foothold there. There are fairer fields ; there is a softer climate ; there are roads and schoolhouses, and more social advancement, further southward. So he turns away ; and so we go on, year after year, hewing down our wealth of timber and carrying it off to keep up the pros-

perity of other States. Now, a bushel of wheat is worth, in Oconto, twice what it is on Rock Prairie; so is a bushel of oats, or a barrel of pork. Wheat, oats, potatoes, hay, &c., yield as well in our pineries as they do on the prairies—and are said to be surer crops. A farmer, then, can make more money, though his land be one-third covered with stumps, here, than away from the pineries. The roads are fewer, and not as good—but the farmer will have less need of them—for he will find a good market at his own door for all he can raise. Schools are readily established; and before the new-comer has had time to grieve over the absence of such things, he finds them all in operation.

The business of shingle-making has grown to be one of the most important in this region. I have no means at hand to give an idea of the amount of shingles manufactured within a year, but it is very large, requiring the active services of several vessels to carry them away from this port alone (Green Bay). By far the largest proportion of them are manufactured by the German and Belgian farmers in this vicinity. It affords them work for the winter, and gives a value to that pine which is so far inland as to prevent its being hauled out in the form of saw-logs. It is not unusual, during the sleighing season, to see caravans of shingle teams coming into Green Bay, equalling in size and quaintness what we hear of those which make annual pilgrimages from Pembina to St. Paul.

Other branches of the business are beginning to grow up and give additional winter work for the farmers—such as the manufacture of pine and oak staves, the getting out of ship-timber, &c. All of these departments of industry, taken together, compensate, to a great extent, for the obstructions which our forests present to rapid farming; and certainly leave no excuse for any man to be idle, winter or summer.

Respectfully, your obedient servant,

CHARLES D. ROBINSON.

Green Bay, Feb. 22, 1860.

FRUIT-GROWING, ETC., IN BROWN COUNTY.

BY CAPT. J. W. COTTON, OF GREEN BAY.

DR. J. W. HOYT,

Secretary Wisconsin State Agricultural Society:

DEAR SIR:—I have the honor to acknowledge the receipt of your letter of the 30th of December last, requesting my views and success in fruit raising, drainage, &c., in northern Wisconsin.

I am afraid that my experience has not been sufficiently great in either, to render my views of much value, but such as they are, you are welcome to them.

With regard to the raising of fruit in general, and apples in particular, in this climate, a word. As to soil, next to gravel, I think a deep sandy loam with a sandy or gravelly sub-soil the best. The less stable manure put about the trees, the better. But if the soil is not rich enough, muck or black soil can be mixed with it advantageously. The apple does well, also, on a clayey loam on a side hill, or in a location perfectly dry. The trees furnished from nurseries are generally trimmed too high, leaving the stock exposed to the hot sun in summer, and more liable to injury from severe cold in winter. My trees that branch out a foot or two from the ground, are much healthier and less liable to winter-kill than those that are trimmed high. Late frosts after the trees were in blossom or the apples formed, have been the cause of the loss of a large part of my apple crop for the last two years. I think the best remedy would be to put litter round the trees after the ground has frozen, so that they may be kept back till after the danger of injury from frosts is over.

With regard to ditching, I have tried various ways, and all successfully. In the year 1858, I lost my whole crop of oats

on about ten acres of land from not being able to sow them in season, in consequence of the land being too wet to plow. They were not sowed till June, and were totally destroyed by rust. The soil is a black sandy loam of about a foot in depth, with a clay sub-soil. In the fall of '58, I made about 4,000 feet of covered ditches and 1,000 feet of open ditches. The following season, although the spring was wet and continued so till June, we were able to get in our seed in tolerable season. We planted the field with corn and carrots ; from nine acres we got about 800 bushels ears of corn, and from one acre 1,000 bushels of carrots. The crop of corn would probably have been fifty per cent. greater, had not the early frosts rendered it necessary to cut it up when not more than half or two-thirds of it was ripe. The water ran freely from all the ditches, but still from the nature of the soil, being extremely retentive of water, we were rather late in planting, particularly the carrots.

I made my ditches in the following manner, having tried various ways in order to ascertain the best. Of course, as they were only made in '58, I cannot as yet determine which will be the most durable.

1*st*. I laid out my drains about thirty feet apart. Then ran my plow forward and back two or three times, then shoveled out the loose dirt ; afterwards used the sub-soil plow till the ditches were two feet deep ; then finished digging with the spade. The breadth of my ditches at the top was about two feet ; at the bottom, six or eight inches. I used small oaks and pines about four inches through at the butt—a portion of the butt is sawed off for placing transversly in the drain about six inches above the bottom. The breadth of the drain at this part may be assumed at nine inches, in which case the length of the cross bars will require to be about fifteen inches, so as to have three inches resting on each side and are to be placed in the drains at intervals of four feet apart ; they are forced firmly into their proper position by a few blows of a heavy mallet or beetle, the workman taking care that they are all in the same plane or level. Any earth loosened from the sides in

striking down the bars, is of course, thrown out as the work is proceeded with. After the butt-ends of the trees (which are divested of their branches in the woods), are severed and placed transversely in the drains in the manner just described, the remainder of them are laid longitudinally above the bars, three being commonly placed side by side, and covered with branches and twigs previous to putting in the earth thrown out in digging the drains. This kind of drain can be only used when the subsoil is sufficiently cohesive, to afford a proper support to the transverse bars of wood. The longitudinal spars are to be laid as closely as possible, with the top and butt ends alternately in the same direction so as to make them fit the better.

There is thus formed beneath the wood a channel for the passage of water of about six inches in width and the same in depth. In replacing the earth a plow with a long double-tree attached, so that the horses can work, one on each side of the ditch, will diminish the labor very much.

2*d*. In making my ditches with stones, I proceeded in the same manner in digging them, but made them only about 20 inches wide at the top, and from 2 1-2 to 3 feet deep—about one foot wide at the bottom. I draw small stones from my fields and place them near the ditches ; then pave the bottom of the ditches with those of a medium size, by setting them on the small end as closely as convenient, placing the flat ones next to the bank to prevent it from caving ; the largest are next used and thrown in promiscuously, being careful not to throw them against the sides of the ditch. I then complete the stone work by leveling with the smallest ones that can be procured, not filling it nearer than one foot from the surface. Before filling in the earth, it is well to put in a few pine shavings over the stones. Then fill in the earth as before directed with a common plow.

3*d*. I dug them as before and put in poles, with branches on top, to within one foot of the surface, and filled in as before.

Your obedient servant,

J. W. Cotton.

Green Bay, February 15, 1860.

EXPERIENCE IN SORGHUM AND IMPHEE.

BY J. C. PLUMB.

DR. J. W. HOYT,

Secretary Wisconsin State Agricultural Society:

DEAR SIR:—According to your request, I herewith submit a brief statement of my experience in Sorgho and Imphee raising and manufacture during the past year.

Planted the 27th and 28th of May, on a vacant portion of our "'76 nursery" grounds; being the crown of a prairie ridge, sixty feet above water, underlaid by lime rock; one acre of Imphee and two of Sorghum; seed from the south; one pound per acre. Only about one-fourth grew; cause, bad planting and unfavorable weather. Rows about two and a half by four feet; well cultivated through the season. June frosts nipped it slightly; those of July, August and September did not reach it. It stood green and fine at the time of the Fair at Milwaukee, at which we exhibited a quantity of the Imphee, as your committee doubtless have noticed.

Early in October, about one-fourth was stripped, standing in the field, without visible effect upon the character of the syrup; and soon after the whole was cut and placed in broad piles of a wagon-load each on the ground, and well covered with straw, also a layer of straw underneath; this simply to prevent the action of frost and dews.

The 25th to 28th of October we made up nearly one-half of the canes; found the Imphee canes with richer juice and better flavor than the Sorgho; having less of the raw vegetable taste; but yielding less sweet per acre. The canes are short, and the sheath around the joints possesses a coloring matter which renders the syrup of a dark color, unless stripped early, and thoroughly done.

A pressure of other business induced us to defer making up the balance of the crop until cold weather set in, and the convenient season did not come until January, when we worked the most of the balance—about the 25th. Found that portion which had been stored in an open shed in good condition, and made syrup as good as from that worked in the fall.

A small portion left in the field in piles, was much soured by changes of the weather.

About a tun's weight was prepared ready for the mill, and stored in a close granary, which we will work up on the approach of mild spring weather; and from examination now, we are led to expect a good article of syrup from it.

Samples of syrup made at these different times we herewith present you.

We used one of Turner & Skinner's heavy three-roller mills, with graduated pressure, and "Cook's self-cleansing Evaporator;" the same with which we operated in connection with Mr. C. Spears, at our last State Fair. [See committee's report.]

We strained the juice through a coarse woolen bag, as it passed from the mill to the evaporator—used no ingredient of any kind to cleanse with, the evaporator being fully competent, under proper management, to remove all the vegetable fibrinous and mucilaginous matter from the juice, and that so quickly, after expressing, as not to allow any increase of the acids; and if any fermentation has occurred, it is folly to neutralize it with alkalies or lime, after the prevailing mode.

The effect of alkali is to destroy the honey-like flavor and texture of the syrup, and give a permanent disagreeable mineral taste, as well as dark color.

The corny, vegetable flavor of the fresh syrup will disappear by a few weeks of age, and herein lies much of the prejudice against Sorgho syrup, that it is used fresh from the boilers, or as impregnated with lime used in correcting the acids.

We give this statement, simply to show that good syrup has been made, the past unfavorable season of almost universal fail-

ure in our State; and to encourage the many in another trial of this most valuable, and, we believe to be, most successful branch of culture.

From our experience, we are led to the conclusion that a good crop of Sorghum or Imphee, can be raised as easily and cheaply as a crop of corn, and recommend the following mode of culture, &c.:

Having secured a piece of warm, alluvial, or sandy land, located high and dry—if rich, all the better—plow deep, as early in the spring as possible, and give it a second plowing, or deep cultivating immediately before planting. The land should be in the best of condition, as the seed starts feebly, and requires the best of care to get it along vigorously, until the regular corn weather of July.

The seed should be soaked a few hours in warm water; put in a small bag, and well enveloped with woolen cloths, kept in a warm place, and frequently shaken, until it begins to sprout, then rolled in plaster, or fine loam, and planted with care, one inch dep; rows three feet apart, each way. We recommend marking the ground both ways, that the rows may be straight, and the hills prominent. Put a handfull of plaster or fresh ashes on each hill, immediately after planting, and on the first appearance of weeds or grass, run the cultivator both ways. Stir the soil around the hill on the first appearance of the plants. *Prompt and early cultivation* with the *stimulus of the plaster* will secure an *early growth.*

Experience proves that nine-tenths of the chances of success and failure lie in the first few weeks of the young plant, and one acre extra-well started and cared for, will yield more profit than several with ordinary care.

Plant only upon dry soils; sandy or gravelly ridges develope far more of the saccharine matter, in proportion to the bulk of cane, and are about the only suitable places for Sorghum.

Our experience has not convinced us that any of the varieties of Imphee are much superior to the Sorghum, all things considered.

In regard to the summer culture, it should be of the most thorough kind. Cut off all suckers that start after midsummer; if nipped below the first joint they will cease to shoot; half grown canes are good for fodder only; commence stripping about the time of the first frost; strip two-thirds of the way up; cut up as soon as the first hard frosts occur; cut off one-third of the length with the top for fodder, and work up immediately. If it cannot be worked immediately, cut and stook after the manner of corn, setting very compact in large stooks, with a layer of unstripped cane around the outsides to keep out the weather. Bind the tops tightly and it will keep till winter. When so kept, two or thee inches of the butts should be cut off and fed to the swine; tops cut off one-third of the length, bound and stacked for the cattle; they make the best of fodder, and will pay the cost of cultivating the crop. Great care should be exercised in storing the cane, in the fall, in piles or out-buildings, as it will quickly heat and be worse off than if stacked in the field. Freezing is beneficial by chemically changing the gums and neutralising the acids, thereby increasing the yield. If partly frozen the expressing is far more easily and effectively performed, the water remaining partly in the cane, and the juice being 50 per cent. richer than in the fresh green state; the cleansing process being one-half performed by the frost.

But great care should be exercised to keep the cane below the freezing point after once being frozen hard.

Few doubt the capacity of our State to produce any desirable amount of Sugar Cane in seasons when we can get a good crop of corn; but the great inquiry is about the

MANUFACTURE,

Which is necessarily a process requiring good *machinery, much energy*, and *constant care*, for a failure in any one of the different operations will defeat the object in view.

In regard to the mill for expressing the juice, we will only say that it should be *immensely strong*, with the least possible

gearing, and always with a graduated, self-regulating pressure upon one of the rollers, and with sufficient power to *remove all the juice;* it should also be free from the constant leakage and liability to clog, which characterizes some now in use.

We think that mills of greater strength than those in common use, will be demanded soon as the business becomes more settled, especially for working cane partly frozen.

The juice should pass immediately from the mill to the evaporator, and be filtered in the passage.

We have used a coarse woolen bag, of about two pail capacity, attached to the receiving tank, with an alternate to take its place while shaking out the deposit, which will clog it every hour. Some recommend a gravel filter, which we have never tried, but something is necessary; even the receiving tub filled with straw, will do temporarily.

The juice should not be exposed to the air over twenty minutes before heating to the boiling point; and now comes the climax of all the process, the reduction to syrup, and without that simple combination of furnace, boiler, and cleanser, in the adjustable rocking machine called "Cook's Evaporator," or some equivalent, we could not have patience to engage in the business at all. But this is so *simple*, *economical*, *portable* and *effective*, that it is a pleasure to run it, and instead of its being the burning, sooty, dipping, daubing operation of the old way, the operation is cleanly, pleasantly and quickly performed, as your committee do report.

We have operated this evaporator in different portions of the State, and it has given surprising satisfaction where exhibited. Its construction is upon a new principle, which secures the constant flow of the juice, from the time it enters until it passes off syrup. It also retains the scum and feculent matter at the ends of the several channels, from which it can be removed every half hour, and performs the cleansing operation better than by introducing alkalies and foreign ingredients. Our limits will not admit of a minute statement of our experience and observation on this new branch of productive industry;

but we would encourage every farmer to plant some of the sugar cane, knowing—

1st. That it is more valuable than corn for fall and winter fodder, especially when grown thick, say from four to eight pounds per acre of seed.

2d. That it is next to corn in its fattening qualities for swine, who feed greedily upon it through the winter.

3d. That it has yielded 200 gallons per acre of syrup, in this State, and may do so again.

4th. That it will supply a great want in the present and future of the Middle and Northern States, by affording an excellent and pure article of sugar for the preservation of our *hardy small fruits* and pie plant, which we can produce almost without cost, and which will become thereby articles of every day consumption the year round ; and still further, to supply the vast demands of domestic cookery.

J. C. Plumb.

Madison, March 1, 1860.

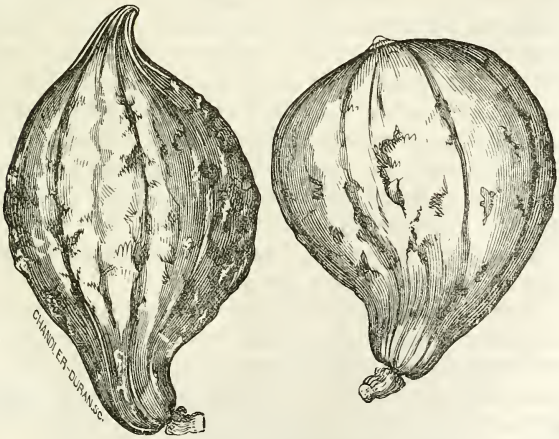
THE HUBBARD SQUASH.

BY DR. CHARLES JEWETT, OF BOSTON.

DOCTOR HOYT,

Secretary Wisconsin State Agricultural Society:

DEAR SIR:—In answer to your request for a statement of my experience with that best member of the squash family, familiarly known in the east as the "Hubbard Squash," I send the following brief description, with the hope that some of your Wisconsin people who have but little knowledge of it, may be induced to test its relative value. The small package of seeds which accompany this communication, I know to be of the pure variety.



It has a rind, or shell, when thoroughly ripened, almost as hard as that of a gourd, and may be kept without injury through the entire winter. Of the produce of my own garden

the last season, not a single squash has shown the least sign of decay. In point of richness and flavor, this variety has no rival, and that fact I have not heard questioned as yet, by a single individual who has tested its qualities at the table.

As I sometimes amuse myself and family with a chemical analysis of such substances as may be analyzed without the numberless appliances of a regular laboratory, I made an examination of the Hubbard Squash in November last, the results of which may interest your readers.

I cut from a fine specimen a pound and a half. It yielded a liberal quantity of vegetable fibrine, which when properly acted upon by heat, would, I am sure, have been quite digestible; a considerable quantity of albumen—identical in composition, and equal in value to the white of eggs—and besides these, which I did not weigh, I obtained two ounces of a fine syrup, scarcely inferior to Stewart's best, and over two tablespoonsful of pure starch. I had not up to that time regarded the Squash as a starch-bearing vegetable, and doubt, now, whether its ordinary varieties would yield starch in any considerable quantity. From the results of this hasty analysis, it will be readily perceived by all who have paid any attention to the subject of animal nutrition, that the Hubbard Squash is one of the most nutritious vegetables which our gardens and fields can furnish us. As it contains sugar, its expressed juices would, through fermentation, yield alcohol—though I should by no means advise such a perversion of its valuable elements, as, in my opinion, fermentation neither adds to the value of saccharine juices or beef steak.

Those who would preserve this Squash unmixed, should rear the vines at a considerable distance from other varieties, as I believe bumble-bees, or humble-bees, are an institution of Wisconsin, and will carry for a considerable distance on their legs and bodies, the pollen or fructifying principle of the plant. Thus the different varieties are usually mixed.

Truly yours, CHAS. JEWETT.

ADDITIONS TO THE FLORA OF WISCONSIN.

BY T. J. HALE, UNIVERSITY OF WISCONSIN.

MADISON, March 11, 1860.

DEAR SIR:—In accordance with your request that I should prepare a catalogue of Wisconsin Plants, not before enumerated, in view of a complete catalogue at some future time, I furnish you the following, which may be regarded as a supplement to Mr. Lapham's catalogue published in the Report of the Agricultural Society for 1852. The name of the collector has been placed after each plant in *italic letters*, except in the last three families; these have been studied by Mr. Lapham alone, whose name is placed at the head of each. The number of species and varieties amounts to two hundred and eighty-three, of which one hundred and twelve are Mosses, Liverworts and Lichens, the result of Mr. Lapham's labors.

I remain yours truly,

T. J. HALE.

Prof. J. W. HOYT,
Sec'y Wis. State Agricultural Society.

CATALOGUE.

[Abbreviations, *I. A. L.* for *I. A. Lapham*, *T. J. H.* for *T. J. Hale.*]

RANUNCULACEÆ (Crowfoot Family).

Anemone cylindrica, Gray. Openings. *I. A. L., T. J. H.*
Ranunculus sceleratus, L. Milwaukee. *I. A. L., T. J. H.*

PAPAVERACEÆ (Poppies).

Papaver somniferum, L. Racine. *T. J. H.*
Stylophorum diphyllum, Nutt. Wis. *Gray.*

CRUCIFERÆ (Mustard Family).

Nasturtium officinale, R. Br. Dane Co. *S. H. Watson.*
palustre,
var. hispidum, Gray, Madison, *T. J. H.*
Arabis dentata, Torr. & Gray, Madison. *T. J. H.*
Turritis stricta, Graham, L. Superior. *Gray*

VIOLACEÆ (Violets).

Viola Canadensis, L. Calumet Co. & Penokee Iron Range, Lake Superior. *I. A. L.*

HYPERICACEÆ (St. Johnsworts).

Hypericum Sarothra, Mx. Dells of the Wisconsin. *I. A. L.*
Elodea petiolata, Pursh. Arena. *T. J. H.*

CARYOPHYLLACEÆ (Pinks).

Silene nivea, DC. Madison. *S. H. Watson.*
Stellaria longipes, Goldie, Wis. *Gray.*
Cerastium nutans, Raf. Madison. *T. J. H.*

MALVACEÆ (Mallows).

Malva sylvestris, L. Racine. *T. J. H.*
Napæa dioica, L. Mazo-Mania. *M. Spears.*
Abutilon Avicennæ, Gaertn. Racine. *T. J. H.*

OXALIDACEÆ (Sorrels).

Oxalis Acetosella, L. Two Rivers. *I. A. L.*

SAPINDACEÆ (Maples).

Acer saccharinum
var. nigrum, Gray, Madison. *T. J. H.*
dasycarpum, Ehrh. Madison. *T. J. H.*
Negundo aceroides, Mœnch. Rock and Sugar rivers. *I. A. L.*

LEGUMINOSÆ (Pulse).

Meliotus alba, Lam. Racine and Madison. *T. J. H.*
Psoralea esculenta, Pursh. Black Earth. *M. Spears.*
(This plant has not been found before east of the Mississippi river.)
Robinia pseud-acacia, L. *T. J. H.*
Desmodium canescens, DC. Madison. *T. J. H.*
Cassia Marilandica, L. Mazo-Manie. *M. Spears.*

ROSACEÆ (Roses).

Spiræa tomentosa, L. Upper Mississippi. *I. A. L.*
Rosa Carolina, L. La Pointe and Menasha. *I. A. L.*
stricta, Lindl, La Pointe. *I. A. L.*
rubiginosa, L. Madison. *T. J. H.*

ONAGRACEÆ (Evening Primroses).

Epilobium alpinum,
var. majus, Wahl. Dells of the Wisconsin. *I. A. L*
Œnothera pumila, L. Racine and Madison. *T. J. H.*
Ludwigia polycarpa, Short and Peter. Racine and Kenosha. *T. J. H.*

GROSSULACEÆ (Currants).

Ribes lacustre, Poir, Wis. *Gray*

CUCURBITACEÆ (Melons).

Sicyos angulata, L. Upper Mississippi. *I. A. L.* Madison. *T. J. H.*

SAXIFRAGACEÆ (Saxifrages).

Sullivantia Ohionis, Torr. and Gray. Dells. *I. A. L.*
Tiarella cordifolia, L. Wis. *Gray.*

UMBELLIFERÆ (Parsley Family).

Thaspium barbinode, Nutt. Wis. *Gray.*
Archemora rigida, DC. Madison. *T. J. H.*
Sium angustifolium, L. Cold springs. Madison. *T. J. H.*

ARALIACEÆ (Ginsengs).

Aralia hispida, Michx. Upper Mississippi. *I. A. L.*

CAPRIFOLIACEÆ (Honeysuckles).

Lonicera parviflora,
var. Douglasii. Gray. Dane Co. *S. H. Watson.*
Viburnum pubescens. Ph. Milwaukee. *I. A. L.*

RUBIACEÆ (Madderworts).

Galium concinnum, T. & G. Openings. *I. A. L.*, *T. J. H.*
triflorum,
var. latifolium, Gray. Madison. *T. J. H.*
circæzans, Mx. La Pointe. *I. A. L.* Madison. *T. J. H.*
Oldenlandia cærulia, Gray. Madison. *T. J. H.*
Spigelia Marilandica, L. Wis. *Gray.*

DIPSACEÆ.

Dipsacus sylvestris, Mill. Milwaukee. *I. A. L.*

COMPOSITÆ.

Liatris pycnostachya. Mx. Common. *T. J. H.*
Eupatorium altissimum, Beloit. *I. A. L.*
sessilifolium, Torr. Dead Lake, Madison. *T. J. H.*
Aster ericoides, L. Wis. *Gray.*
Boltonia glastifolia, L'Her. Racine and Arena. *T. J. H.*
Solidago puberula, Nutt. Milwaukee. *I. A. L.*
Rudbeckia subtomentosa, Pursh. Western part of the State. *M. Spears.*
Coreopsis aristosa, Michx. Wis. *Gray.*
Bidens connata, Muhl. Arena. *T. J. H.*
Leucanthemum vulgare, Lam. Milwaukee. *I. A. L.* Racine and Madison. *T. J. H.*
Artemisia caudata, Michx. Milwaukee. *I. A. L.*
Antennaria margaritacea, R. Br. La Pointe. *I. A. L.* Green Bay. *T. J. H.*
Cirsium discolor, Spreng. Racine. *T. J. H.*
altissimum, Spreng. Racine. *T. J. H.*
Cichorium Intybus, L. Madison. *T. J. H.*
Nalbalus asper, T. & G. Madison. *T. J. H.*
Mulgedium Floridanum, DC. Blue Mounds. *T. J. H.*
leucophæum, DC. Racine. *T. J. H.*

SCROPHULARIACEÆ.

Verbascum Blattaria, L. Madison. *T. J. H.*
Linaria Canadensis, Spreng. Racine. *T. J. H.*
Gerardia auriculata, Mx. Dane Co. *S. H. Watson.*

ACANTHACEÆ.

Dianthera Americana, L. Wis. *Gray.*
Dipteracanthus strepens, Nees. Wis. *Gray.*

VERBENACEÆ (Vervains).

Verbena officinalis, L. Mazo-Manie. *M. Spears.*

LABIATÆ (Mints).

Isanthus cœruleus, Mx. Kaukana. *T. J. H.*
Hedeoma pulegioides, Pers. Racine Rapids. *T. J. H.*
Monarda didyma, L. Wis *Gray.*
Blephilia hirsuta, Raf. Wis. *Gray.*
Stachys palustris.
var. cordata, Gray. Racine. *T. J. H.*
Marrubium vulgare, L. Burlington. *T. J. H.*

BORRAGINACEÆ (Borrageworts).

Lithospermum angustifolium, Mx. Mines. *T. J. H.*
latifolium, Mx. Kaukana. *T. J. H.*

CONVOLVULACEÆ (Bindweeds).

Cuscuta umbrosa, Beyrich. Madison. *S. H. Watson.*
glomerata, Choisy. Madison. *T. J. H.*

SOLANACEÆ (Nightshades).

Solanum Dulcamara, L. Racine. *T. J. H.*

APOCYNACEÆ (Dogbanes).

Apocynum cannabinum.
var. glaberrimum, Gray, Mazo-Manie. *M. Spears.*

ASCLEPIADACEÆ.

Asclepias purpurascens, L. Milwaukee. *I. A. L.*
variegata, L. Wis. *Gray.*
Nuttalliana, Torr. Milwaukee. *I. A. L.*
Acerates monocephala, Lapham. Eagle Prairie, also Dane Co. *I. A. L.*
This is a new species, unless it should be united with A. lanuginosa, Descaisne.

OLEACEÆ (Ash Family).

Fraxinus viridis, Mx. f. Wis. *Gray.*

AMARANTACEÆ (Pig Weeds).

Amarantus albus, L. Mines. *T. J. H.*

POLYGONACEÆ.

Polygonum Orientale, L. Madison. *T. J. H.*
aviculare.
var. erectum, Roth. Bacine, Green Bay and Mines. *T. J. H.*
tenue, Mx. Mazo-Manie. *M. Spears.* Arena. *T. J. H.*
Rumex verticillatus, L. Milwaukee. *I. A. L.*
maritimus, L. Upper Miss. *I. A. L.* Mazo-Manie. *M. Spears.*

EUPHORBIACEÆ (Spurgeworts).

Euphorbia polygonifolia, L. Milwaukee. *I. A. L.* Kenosha. *T. J. H.*
Geyeri, Engelm. Arena. *T. J. H.*
glyptosperma, Engelm. Mazo-Manie and Madison. *M. S.*
On the authority of Mr. Lapham.
Acalypha Virginica, L. Menasha and Madison. *T. J. H.*

URTICACEÆ (Nettles).

Cannabis sativa, L. Waste grounds. *T. J. H.*

CUPULIFERÆ (Oaks).

Quercus coccinea, Wang. Dane Co. *I. A. L.*

BETULACEÆ (Birches).

Betula excelsa, Ait. Manitowoc and La Pointe. *I. A. L.*

SALICACEÆ (Willows and Poplars).

Populus angulata, Ait. Common. *T. J. H.*
balsamifera, L. Green Bay, Milwaukee. *I. A. L., T. J. H.*

NAIADACEÆ.

Naias flexilis, Rostk. Common. *I. A. L., T. J. H.*
Potamogeton lucens, L. Madison. *T. J. H.*
natans, L. Madison. *T. J. L.*

ORCHIDACEÆ (Orchises).

Platanthera flava, Gray. Oconomowoc. *I. A. L.*
lacera, Gray. Oconomowoc. *I. A. L.*
Cypripedium arietinum, R. Br. Wis. *Gray.*

SMILACEÆ.

Trillium erectum, L. Common. *I. A. L., T. J. H.*
var. album, Gray. Common. *I. A. L., T. J. H.*

JUNCACEÆ (Rushes).

Juncus debilis, Gray. Milwaukee. *T. J. H.*

CYPERACEÆ (Sedges).

Cyperus Michauxianus, Schultes. Madison. *I. A. L.*
inflexus, Muhl. Dead Lake, Madison. *T. J. H.*
phymatodes, Muhl. Dells of the Wisconsin. *I. A. L.*
Hemicarpha subsquarrosa, Nees. Arena. *T. J. H.*
Eriophorum gracile, Koch. Milwaukee. *I. A. L.*
Fimbristylis capillaris, Gray. Dells of the Wisconsin. *I. A. L.* Blue Mounds. *T. J. H.*
Carex Crus-corvi, Shuttleworth. Milwaukee. *I. A. L.*
cephalophora, Muhl. Milwaukee. *I. A. L.* Madison. *T. J. H.*
trisperma, Dew. Two Rivers. *I. A. L.*
tenuiflora, Wahl. Milwaukee. *I. A. L.*
canescens, L. Milwaukee. *I. A. L.*
logapodioides, Schk. Milwaukee. *I. A. L.*
scoparia, Schk. La Pointe. *I. A. L.*
vulgaris, Fries. Milwaukee. *I. A. L.*
aperta, Boot. Milwaukee. *I. A. L.*
aquatilis, Wahl. Milwaukee. *I. A. L.* Madison. *T. J. H.*
crinita, Lam. Sheboygan. *I. A. L.*
limosa, L. Wis. *Gray.*
tetanica, Schk. Milwaukee. *I. A. L.* Madison. *T. J H.*
Crawei, Dew. Milwaukee. *I. A. L.*
Davisii, Schw. Beloit. *I. A. L.*
digitalis, Willd. Milwaukee. *I. A. L.*
pedunculata, Muhl. Milwaukee. *I. A. L.*
varia, Muhl. *I. A. L.*
Richardsonii, R. Br. Rock County. *Dr. Sartwell.*
flava, L. Milwaukee. *I. A. L.*
Œderi, Ehrh. Two Rivers. *I. A. L.*
filiformis, L. Milwaukee. *I. A. L.*
retrorsa, Schw. Milwaukee. *I. A. L.*

GRAMINEÆ (Grasses).

Alopecurus pratensis, L. Madison. *T. J. H.*
vilfa vaginæflora, Torr. Madison. *T. J. H.*
Sporobolus heterolepis, Gray. Madison. *T. J. H.*
cryptandrus, Gray. Blue Mounds. *T. J. H.*
Agrostis perennans, Tuckerm. Milwaukee. *I. A. L.*
Oryzopsis Canadensis, Torr. Two Rivers. *I. A. L.*
Poa alsodes, Gray. Wis. *Gray.*
Eragrostis reptans, Nees. Common. *I. A. L., T. J. H.*
pectinacea, Gray. Dells. *I. A. L.*
var. spectabilis, Gray. Arena. *T. J. H.*
Festuca tenella. Willd. Common westward. *I. A. L., T. J. H.*
Uniola latifolia, Michx. Madison. *Mrs. Carr.*
Phalaris arundinacea, L. Common. *I. A. L., T. J. H.*
Canariensis, L. Madison. *T. J. H.*
Panicum glabrum, Gaudin. Common westward. *T. J. H.*
sanguinale, L. Milwaukee. *I. A. L.*
autumnale, Bosc. Arena. *T. J. H.*
Setaria viridis, Beauv. Milwaukee. *I. A. L.*
Italica, Kunth. Fields. *I. A. L., T. J. H.*

FILICES (Ferns).

Woodsia obtusa, Torr. Dells. *I. A. L.*
Cystopteris fragilis, Bernh. Madison. *T. J. H.*
Aspidium spinulosum, Swartz. Milwaukee. *I. A. L.*
var. dilatatum, Gray. Blue Mounds. *T. J. H.*
marginale, Swartz. Dells. *I. A. L.*
fragrans,
a new variety. Penokee Iron Range, L. Superior. *I. A. L.*
aculeatum, Swartz. Penokee Iron Range. *I. A. L.*
acrostichoides, Swartz. Racine. *S. J. H.*

MUSCI—(*Mosses*).

BY I. A. LAPHAM.

SPHAGNUM cymbifolium, Dill. Milwaukee to Lake Superior.
squarrosum, Pers. Penokee Iron Range near Lake Superior.
acutifolium, Ehrh. Milwaukee to Lake Superior.
PHASCUM cuspidatum, Schreb. Milwaukee.
GYMNOSTOMUM curvirostrum, Hedw. Milwaukee and Green Bay.
WEISIA viridula, Brid. Milwaukee. Madison.
DICRANUM varium, Hedw. Milwaukee.
heteromallum, Hedw. Lake Superior
flagellare, Hedw. Milwaukee.
Schraderi, Web & Mohr. Milwaukee.
undulatum, Turner. Milwaukee to Lake Superior.
CERATODON purpureus, Brid. Milwaukee to Lake Superior.
FISSIDENS sub-basilaris, Hedw. Milwaukee.
TRICHOSTOMUM pallidum, Hedw. Milwaukee.

Barbula unguiculata, Hedw. Milwaukee to Lake Superior.
mucronifolia, Br. & Sch. Milwaukee. Mississippi river.
Desmatodon flavicans, Br. & Sch. var. obtusifolium. Janesville.
Tetraphis pellucida, Hedw. Milwaukee to Lake Superior.
Orthotrichum strangulatum, Beauv. Milwaukee. Madison.
Schistidium apocarpum, Br. & Sch. Milwaukee to Lake Superior.
Hedwigia ciliata, Ehrh Milwaukee to Lake Superior.
Atrichum undulatum, Beauv. Milwaukee to Lake Superior.
Polytrichum commune, Linn. Milwaukee and Madison, to Lake Superior.
var. perichætale. Penokee Iron Range.
gracile, Menzies. Madison. *S. H. Watson.*
juniperinum, Hedw. Milwaukee to Lake Superior.
Timmia megapolitana, Hedw. Milwaukee. Janesville.
Anlacomnion heterostichium, Br. & Sch. Milwaukee. Madison.
palustre, Schwægr. Milwaukee.
Bryum pyriforme, Hedw. Milwaukee. Janesville.
nutans, Screb. Milwaukee.
argenteum, Linn. Milwaukee.
Wahlenbergii, Schwægr. Janesville.
cernuum, Linn, Milwaukee.
bimum, Schreb. Milwaukee.
intermedium, Brid. Milwaukee.
cæspiticium, Linn. Milwaukee to Upper Miss. River.
atropurpureum, Web. & Mohr. Milwaukee.
Mnium cuspidatum, Hedw. Milwaukee.
Bartramia fontana, Brid. Lake Superior.
Physcomitium pyriforme, Br. & Sch. Milwaukee. Madison.
Fontinalis biformis, Sullivant. Milwaukee.
Leucodon julaceus, Sulliv. Milwaukee.
Anomodon obtusifolius, Br. & Sch. Milwaukee to Lake Superior.
attenuatus, Hub. Milwaukee to Lake Superior.
Leskea rostrata, Hedw. Milwaukee.
Pylasæa intrica, Br. & Sch. Milwaukee.
Plagiothecium repens, Br. & Sch. Milwaukee.
Cyllindrothecium cladorrhizans, Br. & Sch. Milwaukee. Madison.
Neckera pennata, Hedw. Milwaukee to Lake Superior.
Climacium Americanum, Brid. Milwaukee to Lake Superior.
Hypnum gracile, Br. & Sch. Milwaukee. Madison.
Blandovii, Web. & Mohr. Milwaukee.
trignetrum, Linn. Milwaukee to Lake Superior.
splendens, Hedw. Penokee Iron Range near Lake Superior.
hians, Hedw. Milwaukee.
piliferum, Schreb. Milwaukee.
serrulatum, Hedw. Milwaukee. Upper Mississippi.
delplanatum, W. P. Sch. Milwaukee to Lake Superior.
cuspidatum, Linn. Milwaukee.
cordifolium, Hedw. Milwaukee.
uncinatum, Hedw. Penokee Iron Range near Lake Superior.
aduncum, Hedw. Milwaukee.
filicinum, Linn. Milwaukee.
Crista-Castrensis, Linn. Penokee Iron Range near Lake Superior.
imponens, Hedw. Milwaukee.
curvifolium, Hedw. Milwaukee to Lake Superior.
Haldanianum, Grev. Milwaukee to Lake Superior.
pratense, Koch. Penokee Iron Range near Lake Superior.
salebrosum, Hoffm. Milwaukee to Lake Superior.
lætum, Brid. Milwaukee.
acuminatum, Beauv. Milwaukee.
rutabulum, Linn. Milwaukee.
rivulare, Br. & Sch. Lake Superior.
polymorphum, Br. & Sch. Milwaukee to the Upper Mississippi.

HYPNUM hispidulum, Brid. Milwaukee.
adnatum, Hedw. Milwaukee.
serpens, Hedw. Milwaukee. Janesville.
radicale, Brid. Milwaukee. Madison.
orthocladon, Beauv. Milwaukee. Madison.
noterophilum, Sull. & Lesqx. Wisconsin. *Mr. Sullivant.*
riparium, Hedw. Milwaukee.
polygamum, Br. & Sch. Milwaukee.

HEPATICÆ—(*Liverwórts*).

BY I. A. LAPHAM.

MADOTHECA platyphylla, Dumort. Scale moss. Milwaukee to L. Superior.
PTILIDIUM ciliare, Nees. Milwaukee.
TTICHOCOLEA Tomentella, Nees. Milwaukee.
MASTIGOBRYUM trilobatum, Nees. Milwaukee to L. Superior.

LICHENES—(*Lichens*).

BY I. A. LAPHAM.

USNEA barbata, Fr. Milwaukee to Lake Superior.
RAMALINA calicaris, Fr. Milwaukee.
PELTIGERA rufescens, Hoffm. Milwaukee.
STICTA pulmonaria, Ach. Milwaukee to Lake Superior.
glomerulifera, Delis. Milwaukee.
PARMELIA perforata, Ach. Milwaukee.
tiliacea, Ach. Milwaukee.
lævigata, Ach. Milwaukee.
caperata, Ach. Milwaukee.
parietina, Fr. Milwaukee.
speciosa, Ach. Milwaukee.
stellaris, Wallr. Milwaukee.
pallescens, Fr. Milwaukee.
subfusca, Fr. Milwaukee.
albella, Ach. Milwaukee.
CLADONIA gracilis, Fr. Milwaukee.
furcata, Floerk. Lake Superior.
cornuta, Fr. Milwaukee.
Floerkiana, Fr. Milwaukee to Lake Superior.
LECIDA paracema, Fr.
UEBILLICARIA. Lake Superior.
ENDOCARPON Muhlenbergii, Ach. Iron Ridge.
PERTUSCARIA pertusa, Ach.
VERRUCOSA nitida, Schrad.
subelliptica, Tuckerm.
STEROCAULON paschale, Laur. Penokee Iron Range, L. Superior.

COUNTY SOCIETIES.

FARM MANAGEMENT AND FARMER CULTURE.

From an Address before the Jefferson Agricultural Society, Sept. 1858, and the Kenosha Society, Sept. 1859.

BY HON. L. P. HARVEY.

I trust that the farmers of this County are not contented with their present attainments in the science or in the practical details of husbandry, as I am well assured very few of them are satisfied with the nett returns obtained from the capital and labor invested. Now, it is my belief, that about all disappointments in result from farming operations are directly chargeable to deficiency of attainment or attention. "Success," says Mr. Greeley, "everywhere follows *thoroughness* and crowns *merit*, else this world is a riddle, and distinction between right and wrong a myth." No man in any calling is quite exempt from liability to misfortune; but thrifty men, in the field as elsewhere, make the "luck" which distinguishes their success above that of their neighbors.

In our careless comments upon the habits and management of our acquaintances, we daily recognize the truth that some possess the industry, tact, and force which command success against the most adverse circumstances; while others disclose deficiencies that warrant failure, though the elements, the seasons, the markets, and every other extraneous cause conspire in their favor. There are farmers of whom we never reckon it possible

they will fail, any year, to find wherewith to meet their obligations, provide additional comforts for their families, and add somewhat to previous accumulations. There are greater numbers, of whom we seldom expect they will overtake their liabilities, multiply the little luxuries of good living, or begin to lay up gains.

To all those farmers who are toiling hard, from year to year, and only "holding their own"—to the great company of hard workers, who find themselves yearly running *behind* in property and conveniences for conducting their business, I would make it a word of cheer, that "It is not in their *stars* that they are underlings." There is better *luck* in better *management*.

WHERE THE PROFITS ARE.

In every kind of business, the great bulk of returns go to repay the inevitable cost of outfit and management. The items of that tempting, coy, coquettish sum termed "*profit*," which is, after all, the main object of endeavor and excitement to enterprise, can be computed only on the "margin" of our operations, and consist in the little savings and advantages which intelligence, industry, and ingenuity, glean precisely where ignorance, indolence, and heedlessness make their wastes. For example:

IN GRAIN GROWING.

An average yield of grain, at the average market price, no more than pays cost, if it does that. To make anything clear, the producer must raise it at a less cost per bushel, or get more for what he raises, than the scale that only quits cost. If he can make *both* advantages, his profits will be considerable. Now the little wastes that enhance and the little heeds that cheapen the costs of production, demand attention every day.

Upon sound judgment in determining between different patterns of farming implements, and care in selecting good tools of their kind, depends the saving or the waste of a great deal of expensive force in farming.

Putting tools and machinery in repair at leisure hours, against the time their use will be required, saves much time of all the laborers on the farm, while neglect in this particular, is sure to interpose delay just when labor is most valuable.

Care in preserving all the implements of farm labor from exposure to the elements when, not in use, will double, and even quadruple their durability. Sinking a few hundred dollars, in a period of two or three years, by unnecessary wear and decay of tools and machinery, is a gratuitous addition to the cost of carrying on a farm.

Deep plowing—plowing in the fall—supplying ingredients in which the soil becomes deficient by cropping—changing seed—judicious rotation of crops—every one of the items of thorough culture, repays attention by enhanced yields, or punishes inattention by diminished returns, with no corresponding difference in the cost of cultivation.

Permit me to express, in passing, a surprise I have often felt, that farmers will persist in raising rye with winter wheat; oats, wild buckwheat, and other foul stuff, with spring wheat; and inferior qualities of all kinds of grain; when, in all the main items of cost, use of land (or interest on the purchase money), plowing, sowing, harvesting, threshing and getting to market, it takes the same outlay to raise a bushel of weed-seeds, or of mixed grain, as it does to produce a bushel of the best quality, and pure of its kind. The difference in the yield of merchantable grain, per acre, and in the market value of what is sold, must equal a fair profit on the entire crop.

I know it is said that shippers make no proportionate difference between clean and foul grain—the ostrich stomach of the Eastern Market devouring all without discrimination. That it is only the home miller, who manufactures what he buys, who keeps appealing to the farmer, as the distressed boarder did to his landlady: "My good madam, if you will give me dirt and butter, be so kind as to bring me the dirt on one plate and the butter on another, and permit me to mix it to suit myself." The eastern miller is only farther off than the home miller, and

buys by the cargo instead of by the load. The price of his discriminations, therefore, comes back for the country to settle, instead of individuals. If a cargo of "Milwaukee Club," or of "Sheboygan Club" wheat, brings more per bushel than a cargo from some other lake port, the sections of country marketing at the respective ports, receive or pay the difference, which falls as equally upon individuals, proportioned to what they raise, as taxes upon the respective valuations of the assessment roll.

IN GRAZING AND FEEDING.

The same rules of compensation govern operations in dairying —woolgrowing—stock raising, and the production of pork.— An average success only quits costs, if it does not run the proprietor in debt. A yard of poor cows are only a herd of *dry ruins*—they will never reward the time and trouble expended upon them. The same number of good, thrifty milkers, would, at the same cost of subsistence and with less wearing labor, turn a good profit.

Your county numbers among her farmers many enterprising and intelligent breeders of good stock, as the prize lists of our State, and of many of our County Fairs, in past years, bear witness; as the exhibition of choice animals here to-day, abundantly testifies. But how many cows, oxen, store cattle, horses, sheep and hogs do you suppose there are in this county, that are actually worth far less than the expenses of rearing them? Depend upon it, while you have been dreaming, not in *vision* but in *fact*, these "ill-favored and lean fleshed" animals have eaten up an equal number "well-favored and fat-fleshed." Individual industry and intelligence can replace every one of these inferior brutes, with a really valuable animal, in a short time, with little expense for the exchange. The gain to the private and aggregate wealth of your county, can be readily seen!

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THE VALUE OF SYSTEM IN FARM-WORK.

The hints I have thus far presented, may be appropriately threaded upon one central truth, which penetrates them all.—

No man can be a successful Agriculturalist who does not govern all his labor, enterprise, study and invention by thorough system. *System*, SYSTEM, SYSTEM is to the farmer, as to every other business man, of that importance which Demosthenes ascribed to ACTION in the orator. What celerity of movement—what promptness of execution—what certainty of result—what saving of expense and force, where every detail of the business is thoroughly mastered by the directing mind! Every operation is wisely forcast; each operative drops to his pre-arranged post of duty, and every motion is directly in the line of the desired result—all things moving like the working of nicely adjusted machinery.

The habit of thoroughly systematizing all the operations of the farm, tends to cure one of the most prevalent wastes of our Agriculture—*attempting too much with too little means.* Few have the peculiar talent requisite to the management of large operations economically, or for employing the labor of others to advantage, upon an extended scale. How many a man, who would be sure of thrift if he could shut in all his labors upon forty acres, makes himself too "awful thin" to hold together, by diluting his force over a quarter or a half section. Your safe, systematic farmer, calculating beforehand how much grain, for instance, it is desirable for him to produce a given year, will set himself at work to see on *how few* acres of land it is possible to grow the given quantity, and *cultivate* accordingly. There is a kind of certainty in all *his* operations, the season through. His crops escape a score of dangers which visit those of his neighbors. At harvest, the compact burthens of his field are secured with ease, in prime order, and with trifling outlays for extra help. Such a man is safe, because his operations, none of them, escape the rule of his management. Show an unsystematic farmer a necessity, whether in accumulating liabilities or need of means for improvements or buildings on his farm, for producing an increased surplus of grain any year, and he will certainly set out to assure it by stretching his efforts over *more land.* He starts wrong, and all the

imperfect culture, spasmodic hurry, wild confusion, and ruinous waste of force, and tools, and grain, of the year's operations are but legitimate and inevitable consequences of the escape of his business from his control. It is not what we *raise*, but what we *clear* that makes us rich.

THRIFT NEVER CONSORTS WITH DEBT.

It is a common complaint that farm labor is less adequately compensated than labor in most other vocations. I have endeavored to show that every branch of Agricultural industry would pay better with better management. But, it is urged, the farmer, of all producers, is most at the mercy of the buyer, compelled to take a price for what he has to sell which is arbitrarily fixed for him. The fact is precisely the reverse. No calling places those engaged in it so independent of every other, as that of tilling the soil; *provided only*, the farmer carefully guards the natural independence of his position by keeping *free from debt.* If pressing obligations force the producer to sell the earliest day he can possibly crowd his commodities into market, he *is*, generally, at the buyer's mercy, and the chances are against his getting a price adequately compensating him for his toil. But if the farmer be free to choose his time for making sales, who is to interfere with him in placing a remunerative price upon his surplus products, and "holding" until that price is offered? The buyer waits upon the seller when demand is greedy. The seller is at the buyer's mercy only when he *must sell*, and no one is under equal necessity of buying. It makes all difference in the profits on a year's labor, whether the farmer is forced to hurried sales, or can coolly choose through a year or two years' range of prices. Interest is a great leech, especially at prevailing rates for the use of money. It absorbs a great deal of the products of labor without increasing, in the least, accumulation of means, or reducing liabilities. But if, in addition to "twelve per cent" interest, or the enhanced price paid for everything bought on time, (for credit always, in some way, exacts interest) the farmer submits to a sacrifice of from

ten to fifty per cent of the price he might obtain for what he has to sell, but for the impelling necessity of meeting promises to pay, he shaves himself worse than most money barbers would do the job for him.

"Borrowing," says old John Taylor, "is one of the most ordinary ways in which weak men sacrifice their future to the present." Debt constantly tempts to present ease and indulgence at the expense of future discomfort and deprivation.—He who contracts a debt, mortgages his future self. Pay day steals rapidly along, and generally brings no means of relief. The money earned before it is expended goes further and purchases far more enjoyment than money spent before it is earned. He who builds or enlarges his estate by the steady accretions of industry and economy, travels the straight and narrow way of thrift—a future of independence, substantial in its rewards, is directly before him. He who improves or buys with promises to pay, pledging his future labors and gains, follows the broad and beaten track whose end is dependence and want.

> " ——— who would fardels bear,
> " To grunt and sweat under a weary life ?"

INTEREST.

Permit me here a digression on *Interest.* Whatever you deem the true policy of legislation on this subject, it is time that our farmers, manufacturers, and all business men, came to a recognition of the fact that borrowing money, in the way of anything like permanent loans, and agreeing to pay such rates as money usually commands with us, is little short of pecuniary suicide. It did answer to pay twelve per cent., or even higher rates, for money, when we could invest in lands at merely nominal prices, and speedily realize a large advance on such purchases. Money did not perhaps obtain, in most cases, more than its just share in the speculation; and it was speculation on both sides. But that condition of things was temporary—it has transpired. Real estate now stands at about its value for cultivation—and everything else ranges with it in price. There

is no business of production or traffic that can afford to pay more than seven per cent. interest for the use of money, except for very short time accommodations. Indeed, it is the better opinion of writers on finance that money at seven per cent. gains rapidly the advantage of labor, where they engage together at that rate; and that loaning at seven per cent. annual interest is more profitable to the owner than any investment of his means.

We hear a great deal said about "inviting capital into our State" by the offer of high rates of interest. That must prove a disastrous state policy which keeps it for the interest of capitalists to loan rather than invest money—and all the money which comes into the State on terms that do not permit equal advantage to the enterprise and industry which actively employ it, is nothing short of an impoverishing curse. The property of the state passes by sure process into the hands of those who loan, to the ruin of the enterprising and industrious, who are richer capital to a State than money.

Do not suspect me of any demagogue purpose to excite prejudice against capital or capitalists. These remarks have, as I believe, an important bearing upon the interests of the creditor as well as the debtor. I would respect, as I certainly recognize, the rights of each. Money is a useless and helpless thing unless enterprise and industry can be engaged, on some terms, to put it to active use. Employed together, money is entitled to its fair share of returns, as labor to its proportionate rewards. If the capitalist grasps for more, he over-reaches himself, as certainly as he does his poorer partner. It is labor lays for the capitalist golden eggs. The prolific source of his gains, should be nourished and cherished, not bled to death. Eastern avarice should take to itself a share of blame for western bankruptcy. But we, debtors, having made, on our side, the hard bargains we are in for, must work out as best we can. Let us, at least, understand, for the future, that borrowed capital is no benefit or help, but, on the contrary, a positive hindrance and fruitful source of embarrassment, unless obtained at rates that we can pay, with industry, frugality, and good management on

our part, and save to ourselves some share of the benefits accruing from its employment.

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SCIENCE MUST ENLIGHTEN AND RELIEVE LABOR.

It is not enough that the farmer toils early and late in the tasks of the field. He must every day learn better *how to work*, if he would really thrive. Agricultural science is not, as ignorant prejudice sneeringly avers, a matter of idle theory or of vagrant speculation. Writers do not spin their teachings from their brains, as the silkworm spins its thread from its bowels ; but, by finding out and studying the phenomena of nature, and comparing with facts in daily experience, genius and learning evolve their lessons of practical wisdom. The glory and strength of man is in his faculties rather than his muscles. Confidently as we are accustomed to rely upon our boasted arms and hands, and strong physical forces, deprived of the inventions of genius and the devices of intelligence we now possess, how unequal should we be to the accustomed tasks of a single day ! As a merely brute force man is about the most helpless creature that moves ; by intellectual supremacy, he is the governor of animals, and may command all the forces of nature. Ye, who esteem man's glory to consist in hard hands and brawny arms, and not in his teeming brain, throw aside all the inventions of genius and devices of intelligence in familiar use, and try those arms and hands at the most common task of labor ! Prepare this field for sowing—or fell a single tree of yonder forest, and convert it into any one of a hundred familiar uses for human comfort and convenience ! What are you without tools ? The ore sleeps far down in the mine—the coal lies hid in the mountain—and whispering from creation's dawn, in a language learned only by genius and study, are the laws of refining, purifying and combination, by which the first rude material of the axe and the plow are formed. The treasures of the earth are sought out and brought to light, the laws of nature heard and translated for human instruction, and every form and

fashion given to matter in the implements of human labor, not mainly by muscular exertion, but by intellectual activity—the God-like toil of thought.

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Man in the savage state, or more truly in the infancy of humanity, presents the fullest development of human strength and of all animal powers; but he stands alike ignorant of, and incapable to control the myriad forces of the world he is sent to subdue to his authority. By study, by thought, by invention, he finds out agencies, and subjects them to his will. He detects the "velocity of winds, the weight of water, and the rage of steam," and makes them the servants of his toil. Gravitation, expansibility, electricity, unfold to his search their subtle laws, and, obedient, work for human convenience. There are yet greater mysteries, and perhaps more wondrous powers, whispering all around us, to be solved by human intelligence, and made serviceable in the promotion of human progress. The elements and the earth teem with forces yet to be harnessed by the intellect of man to the car of Improvement, each imbued with greater energy than the the physical powers of a continent of human beings, tho' all enslaved to do our toil. Man's privilege and destiny are to bring again under his dominion, as at creation, all the forces of nature—to become lord and governor of the whole earth. There are in the hopes of Industry, as in the promises of Religion, a Millenial Future—

"Ever bright with the Deity's smile."

PROFIT AND HONOR IN FARMING.

From an Address before the Dodge County Agricultural Society, Sept. 16, 1859.

BY D. S. CURTIS, ESQ.

In my opinion, the grand *central idea*, in the pursuit of Agriculture, should be—to make the earth produce continually, *large crops*, without diminishing her capacity—to obtain constantly remunerative products, without impoverishing the soil. This is the *great question* of the day.

To effect this, we require improved systems, and improved practice; and what are they—what shall they be? Certainly, as Prof. CAREY says, "We must abandon that practice which brings destructiveness of soils, with productiveness of crops!"

To be sure, here, in Wisconsin, the present beautiful crops give the cheering evidence that we have not *yet* reached the bitterest dregs of slack culture—of impoverished soils.

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A lack of sufficient care in selecting seed, and in preparing it for the field—with constant cropping of *wheat* on the same fields in too long succession—exhausting the soil of ability to make a large, sound yield—*these* together, have produced a deteriorated quality and diminished quantity, in many parts of our State; farmers have so severely abstracted the wheat elements of their lands, without returning anything like an equivalent, until they now begin to fail in some of the essential elements to make a crop of wheat.

Now, the remedy for this is to procure and prepare better seed for sowing.

And to restore, by some practical means, fertility to the soil.

The *first* can be done by selecting sound, healthy wheat; clean it thoroughly through the mill; wash it two or three

times in clean water; then soak it six to ten hours in a strong salt brine, with consistency to float a potatoe; then stir it in fine lime, or ashes, or plaster, to dry it for sowing; this sowed and thoroughly harrowed in, on deep, rich land, will be as certain as any known business transaction, to bring a large, thrifty yield of beautiful wheat, free—ninety-nine times out of a hundred—from rust, smut, or insects. And then the foul stuff, from the mill and the brine, should *all* be carefully gathered up and cooked before being fed out, that none of it will get back to the land, and there grow and go to seed, to multiply the pests, so as again to befoul the land.

The *second*—restoring the soil—can be accomplished in several ways, all more or less cheap and convenient. But what—it is believed—are the *three* cheapest and most practicable modes—consequently most advisable modes, for the farmers of this State, are:

First—*deeper plowing*, or *subsoiling;*

Second—*liberal manuring;*

Third—*rotation in crops.*

These, with several incidental, or resultant processes, will—either of them to a certain extent—*restore* worn-out lands; *improve* them, and *preserve* them from running down, if faithfully and uniformly practiced.

ROTATION OF CROPS.

The *normal* condition of all things in *Nature*, is *transition;* everything in nature, must continually undergo change and decay; which again, as constantly supplies the requisite materials, and is followed by *new growths*, and *new forms.*

Another well established, all-pervading fact to be kept in mind, is—that *different plants* take from the earth various ingredients in *different proportions;* some plants exhausting the soil rapidly of one kind of substance, and others of another; while the soil contains *some* of these requisite substances in much larger quantities than it does of others.

For instance,—*phosphorus* is much more scarce than potash; and *sulphurous* properties much less prevalent than silica ; and *magnesia* scarcer still than lime—and so on.

And again,—*wheat* abstracts from the soil the *earthy phosphates* to a much greater extent than corn does ; while *corn* takes more *silica* than wheat does ; and so on.

Now, we are prepared to speak intelligently of the beneficial effects of *Rotation*, or alternation of crops.

Wheat requires larger quantities of *phosphates*, (chiefly *bone-dust*), *potash* and *magnesia*, than any other grain ; they constituting nearly one-half of its ash.

This phosphorous, in some of its forms is derived from most decomposed animal and woody substances, though in very small quantities ; but it is most abundant in the bones of animals (phosphate of lime) of anything to be found on the farm ; and wheat requires—in its growth—vastly more of these precious elements than any other plant which we raise. There is a good deal of this ingredient, in the shape of phosphoric acid, in new, rank manure ; (particularly in the urine of animals) but then, wheat does not do well, with too much fresh, rank manure ; but, after a year or two, when it is well composted and thoroughly mixed with the soil, then wheat will make a handsome product, on such kind of rich land ; after one crop of oats, or corn, or roots, has been grown and taken off—all of which like this rank, rich soil—and then leave it in friendly condition for wheat. Wheat likes a rich, tenacious, loamy soil—but requires all of the ingredients to be thoroughly distributed and incorporated in the soil. In addition to the other crops named, *clover* and *peas* are good crops to prepare rankly manured land for wheat ; while they like the rich doses of the richest manure, as well as corn and potatoes.

The luxuriant amount of haulm and leaves of peas, clover, and roots, much of which fall and are plowed into the ground, supplying much that wheat wants, while their moisture and decay, in the soil, forms a light quantity of humus which is useful ; and leaves the ground loose and porous, so that the air and

oxygen-gas enter, circulate freely through it, greatly stimulating and aiding healthy growth, after the seed has been carefully selected and cleaned.

These are some of the more obvious ways in which these several plants aid in producing a rich and healthy growth of *wheat;* which cannot long be counted upon where that cereal, only, is raised in continuous succession.

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One more important benefit to be derived from rotation, is that it secures greater variety of crops, and husbandry; and, consequently, greater security, and better preparation of feed for stock.

LIBERAL MANURING.

Another of the modes for restoring and preserving worn soils, and for maintaining them, continually, in good tilth, is *plentiful manuring.*

The beneficial effects of this practice are so clearly obvious, that it seems almost superfluous to do more than name the subject.

Feeding the land, to get rich results, is just as essential, as feeding a horse well that he may perform well—or of highly feeding an animal if you wish him to fat thoroughly.

But, perhaps something may be profitably said about the mode—the ways and means—of best procuring a plentiful supply of manure in this region. Among the numerous sources which may be resorted to, I will point out what, in my mind, are the most prolific and economical resources for the farmers of Dodge and surrounding counties.

Straw for Manure.—All over this State, I see annually, large stacks of *Straw* burnt up. Now this is a ruinous practice, and our State cannot long afford to do it. The *Straw*, of wheat contains a *larger share*, than the kernel does, of that same precious element—*phosphorus;* and when we burn our straw, somewhere in a pile, we waste a valuable amount of that precious fertilizer, which it will, ultimately, cost us much *money* to supply from abroad.

It is a beautiful economy, that much of the *grain*, which we consume, is derived from the air; while the *straw* and *stalks* derive more of *their* substance from the minerals in the earth, and therefore we ought to return them to the earth; and the most profitable and handsome way to do it, is to cut them up in a cutting box—the whole of our straw, stalks and hay—and then keep stock enough to eat them clean, and return a rich mine of manure—furnishing a *bank* in our *barn-yards*, which which will always pay specie dividends; and our cattle which eat them, prove to be the most profitable "gold washers" which we could find or desire.

This is one way that our *straw* can be disposed of much more beneficially, than by burning it; and do much to maintain the productiveness of our farms. And besides, stock should be liberally bedded with it in their stalls.

Muck for Manure.—Now, I have had some very pleasant and profitable experience—and so have my acquaintances—in using the Muck or Peat, of our marshes, for manure—and the result—load for load, on both clay and sand land—was full as good, if not better, than barn-yard manure.

Ditches were dug in the summer and fall—the muck which was thrown out, lay in piles all winter—was frozen and thawed alternately, several times, till it slacked and crumbled down, handsomely, into a fine, light, rich mold; and was spread on corn and potatoe ground; and in the garden; producing some of the best growths of vegetables, that we ever saw.

It is found to be excellent for composting in the barn-yard; and this mixture is found to be better, even, than either, separately; it should be hauled, and scattered with the fresh manure, from time to time, all through the winter.

Thus, we see, the thrifty, enterprising farmer, need be at no loss for manure, in this State, where he can find or have access to any of the marshes; and herein, we may predict, that ere long, *this* will give to our *marshes* their greatest value—that is, as exhaustless sources of richest manure.

They will, in this manner, be easily and cheaply obtained; for the services of the ditches will more than pay the expenses of making them, by benefits to marshes, in draining them for meadows. * * * * * * * * *

DEEP PLOWING—SUB-SOILING.

We have thus hastily gone through with a partial showing of the advantages of rotation and manuring; and now come to *deep plowing*, which completes the *Farmer's Trinity*.

But of all the processes, deep tillage furnishes the most numerous and varied advantages. It not only supplies the elements of fertility, but it does the most to put the land in the best possible condition for the rapid growth of vegetation.

It makes the soil deep, and warm, and porous, so that the surplus water may run off, and the air run in and circulate freely. By going deeper, for more land, it really increases the effective forces of our acres, which is equivalent to increasing their number. For according to the olden parchment a "man's farm goes to the centre of the earth," towards which his plow should constantly gravitate. In this way it serves the purpose of *under-draining*, to considerable extent; by making deeper passages underneath, whereby the water can pass off easily; and by permitting free escape by evaporation of the excess.

By going deeper and bringing more mineral elements from below, a greater and richer variety of ingredients are continually supplied; constantly affording a bountiful *store-house* of nourishment to growing crops.

Another most important effect of deep tillage, and second to no other, is the prevention of the evils of drouth, to a large degree; by allowing the moisture from below to rise up more freely, through deep, well pulverized earth.

The *temperature* being *cooler* below, and *warmer* above, the internal moisture ascends, continually, obedient to the principles of *evaporation*. This will be seen by observing that *hard* ground is always dryer in a "dry time," than *mellow* ground.

Thus the injurious effects of a *protracted drouth* are nearly all obviated by very deep-plowed land; and this process will go on, by the laws of *evaporation*, as long and as deep as the *spade* or *plow goes down*, on the same principle and for the same reasons that the excess of *surface water* passes off by evaporation, where the ground is loose and porous.

Hence the beautiful two-fold blessing is produced by this same operation of *deep-tillage*, namely; the surface water, which is *detrimental* to plants, is allowed to pass off; and where more is *needed* at the too dry surface, it is permitted to rise from the deeper supplies. Therefore let us cherish and use these twin-workers, subsoiling and evaporation; they produce a warm, genial bed for the thrifty growth of the plant.

They also increase the *amount* of yield, as well as *preserve* it, which may be demonstrated thus: Take a piece of land, plow it to a good depth in the start, and then, at *every other* plowing go *one or two inches deeper* for a series of *ten* or *twelve crops*, and for *that length of time*, it will be found to produce *twice as much*, or more, than another similar piece of land in which the *depth of the plowing is not* materially increased after the first plowing; while the increased cost of this slightly increased depth will be but small. Nor will the ground be as severely impoverished by large crops, as on shallow ground.

Another of the beneficial effects of this deep tillage is that it will have the tendency to *limit the quantity of land cultivated* to that extent which can be well and *thoroughly done*, and in some measure put a stop to *that bane* of handsome, prosperous farming, the *cropping of too much land*, so destructively prevalent in the West. Narrow, fine furrows should also be cut.

Correct pactices and thoroughness of operations can alone procure or deserve bountiful results and rewards, in any pursuit or business.

And *particularly* in a profession so *vitally* important as Agriculture, should every thing be done in the most productive and economical manner. * * * * * *

ABSTRACT OF REPORTS.

BAD AX COUNTY.

At the principal meeting of the officers of this Society, for the year, held in Viroqua, April 11, 1859, a premium list was prepared, embracing 22 classes, and the time for their Annual Fair fixed on the 19th, 20th, and 21st days of Sept.

The Fair was held upon the days appointed. Whole number of entries, 147.

So far as Horses were concerned, the exhibition was a decided success; the show of Cattle was about average; and in the other departments, the exhibition was small, owing to stormy weather. Most of the premiums were donated, to apply on debts of the Society for the fitting of Grounds.

RECEIPTS AND EXPENDITURES.

Total Receipts,.....	$400 68
Total paid out,.....	399 58
Balance in Treasury,.....	$ 1 10

The Annual Meeting of the Society was held on the 7th of December, at Viroqua, when the following persons were elected,

OFFICERS FOR 1860:—WM. T. CORNELL, *President*, THOMAS CADE, T. H. TAYLOR, RICHARD WILLIAMS, *Vice Presidents;* O. C. SMITH, *Secretary;* ANNANIAS SMITH, *Treasurer;* MOSES MARSHALL, LOUIS STERLING, and J. MCLEES, *Additional Members Executive Committee.*

BROWN COUNTY.

This Society was fully organized Oct. 26, 1858, by the adoption of a Constitution and the election of officers. Owing to the lateness of the season, no Fair was held in 1858.

Agreeably to the Constitution, the Annual Meeting of the Society was held the 4th day of March, 1859; at which meeting,

JOHN W. COTTON, was elected *President*; TIM. O. HOWE, U. H. PEAK, A. KIMBALL, H. S. BAIRD, RANDAL WILCOX, and N. GOODELL, *Vice Presidents;* M. P. LINDSLEY, *Recording Secretary;* A. C. ROBINSON, *Corresponding Secretary;* DANIEL BUTLER, *Treasurer;* and fifteen Directors, one from each town in the county.

The Treasurer reported thirty-six members and $40 in cash.

The Board of Managers met March 28th, and agreed to hold a Fair on the 5th and 6th days of October, appointed a committee on premium list, &c., &c.

On the 5th and 6th days of October, 1859, pursuant to notice, the Fair came off, and a very creditable one, too.

The whole number of entries was 289, and the number of articles of superior merit, in the various departments, was a surprise to even the most sanguine.

The Address was delivered by J. W. Hoyt.

RECEIPTS AND EXPENDITURES.

Total Receipts.....	$249 07
Total expenditures,.....	162 24
Balance on hand,.....	96 83
Due from State,.....	100 00
Total in favor of Society,.....	$196 83

From the unexpected success of the Fair, the Society feel vastly encouraged, and have already taken steps to render the next one yet more pleasant and successful. The necessary steps have been taken to procure a lease of grounds within the present limits of the city of Green Bay, known as the Manual Labor School Grounds, for permanent Fair Grounds, and the So-

ciety hopes to be able, before another Fair, by subscription and otherwise, to raise a fund sufficient to fit up the grounds with suitable fences and buildings.

CALUMET COUNTY.

This Society held its annual Fair for 1859, at the village of Chilton, on the 5th and 6th days of October.

The county of Calumet is comparatively new, and this was the third exhibition, of the Society, so that very large results should, of course, not be expected.

RECEIPTS AND EXPENDITURES.

The following is a condensed statement of the receipts and expenditures for the year, up to Nov. 1st:

Total of receipts from all sources,.....	$200 12
Total of expenditures,.....	45 49
Balance in Treasury,.....	$144 63

The Annual Meeting of the Society was held at the Chilton House, on the 7th day of December, at which time a new Constitution was adopted, and the following persons were elected,

OFFICERS FOR THE ENSUING YEAR:—T. J. POTTER, *President;* A. D. KITTELL, JOHN C. M. PEIFFER, and ALONZO PETTIT, *Vice Presidents;* ANSEL WATSON, *Rec. Sec'y;* JNO. P. HUME, *Cor. Sec'y;* and F. J. CURTISS, *Treasurer.*

COLUMBIA COUNTY.

From a handsomely printed pamphlet report of its proceedings for 1859, we learn that the Columbia Co. Agricultural Society held its Eighth Annual Fair at Portage City, on the 20th and 21st days of September. The exhibition seems to have been well attended, and to have been altogether a success.

Whole number of entries, 201.

RECEIPTS AND EXPENDITURES.

Total of receipts from all sources	$611 00
Total of disbursements,	479 75
Balance in Treasury, Sept. 22, 1859,	$131 25

The following were the principal

OFFICERS.—R. T. GRAVES, *President;* HENRY CONVERSE, *Secretary;* F. C. CURTISS, *Treasurer.*

CRAWFORD COUNTY.

Pursuant to arrangements made by the Executive Committee at their first meeting for the year, held at Seneca, March 1st, the Second Annual Fair of the Crawford Agricultural Society was held at Mt. Sterling, on the 4th, 5th and 6th days of October. Premiums were competed for in twelve classes, and the whole number of entries was 236; number of premiums awarded, 126.

The Annual Address was delivered by Hon. B. E. Hutchinson, of Prairie du Chien. Exhibitors who drew premiums were paid in cash before the close of the Fair.

On the second day of the Fair, the Annual Meeting of the Society was held, for the election of officers for the ensuing year, and the transaction of other business.

RECEIPTS AND EXPENDITURES.

Total of Receipts,	$233 50
Total Expenses,	210 02
Balance in Treasury,	$23 48

OFFICERS.—DANIEL L. SMETHURST, *President;* JAMES H. GREENE, *Secretary;* JAMES FISHER, *Treasurer.*

DANE COUNTY.

This Society held its Annual Fair for 1859, at Madison, on the 20th, 21st and 22d days of September.

The weather was quite favorable and the attendance was large. The Address was delivered by Hon. H. H. Giles, and was an appropriate and able production.

RECEIPTS AND EXPENDITURES.

Total of Receipts,.....	$717 17
Total of Expenditures,.....	662 01
Balance in Treasury,.....	$45 16

At the Annual Meeting in December, the following persons were elected,

OFFICERS FOR 1860:—Hon. W. R. TAYLOR, *President;* H. TURVILL, J. V. ROBBINS, MORE SPEARS, *Vice Presidents;* HARRISON REED, *Secretary;* W. W. TREDWAY, *Treasurer;* C. CHIPMAN, J. H. B. MATTS, E. D. MONTROSE, *Executive Committee.*

DODGE COUNTY.

The Annual Exhibition of this Society was held at Juneau, on the 14th, 15th and 16th days of September, and was largely attended by farmers and all other classes, from all parts of the county, the number on the last day being estimated at 6000.

The show was not so large as at some other times, but in view of the season, was fair and creditable to the enterprise of the people. Such articles and animals as were entered were thought to be very fine and hard to beat in this State.

The building appropriated to domestic and fancy articles was well filled. Display of fruit but small.

The Annual Address was delivered by D. S. Curtiss, of Madison, and was regarded "a most appropriate and interesting affair."

RECEIPTS AND EXPENDITURES.

Total of Receipts,.....	$624 20
Total of Expenditures,.....	634 20
Balance against Treasury,.....	$10 00

OFFICERS:—BENJ. FERGUSON, *President;* A. H. ATWATER, *Secretary;* DAVID BARBER, *Treasurer.*

DOUGLAS COUNTY.

The Lake Superior Agricultural Society was organized through the instrumentality of Jas. S. Ritchie, Esq., in July, 1859, and the First Annual Exhibition was held at the City of Superior, on the 24th and 25th days of October, of the same year.

The Fair was attended with much enthusiasm, and the entries, though not large in number, were of a notable quality.

Among other objects of interest, were stalks of Rye, 8 feet in height; Corn, 10 feet; Blue Joint and Red Top Grass, 6 feet and 7 inches; Pea Vines, 11 feet 6 inches; Scarlet Radishes, 16 inches in length and 16 inches in circumference; immense Potatoes, &c., &c. The largest premium paid was $10, for first barrel of Superior Flour.

RECEIPTS AND DISBURSEMENTS.

Total Receipts,	$102 00
Expenditures, including $26 for Agricultural Journals,	102 00

This Society embraces within its field of operations the whole region of county naturally tributary to the west end of Lake Superior, and bids fair to be one of the most active and efficient Societies in the State.

OFFICERS:—H. MANN, *President;* JAS. S. RITCHIE, *Secretary* and *Treasurer.*

GRANT COUNTY.

The Grant Agricultural Society held its first meeting for the year 1859, on the 6th day of January, at which time a Premium List was prepared, Judges were appointed, and the President, Secretary, and Treasurer, were authorized to negociate for the purchase of ten acres of land, not more than one mile from the village of Lancaster, for the permanent location of the future Fairs of the Society.

At the next meeting, held March 9th, the Society concluded the purchase of the land as aforesaid, and authorized such let-

ting of contracts for the fitting of the Grounds, as resulted in their occupancy, by the Society, for its Annual Show and Fair, on the 13th, 14th, and 15th days of September.

The number of entries at said Fair was 433, and the exhibition was eminently satisfactory to officers and people.

The following is a condensed exhibit of the

RECEIPTS AND EXPENDITURES FOR THE YEAR 1859.

Total of Receipts, including appropriations for 1856, 1857, and '58,.....	$1,147 70
Expenditures, including $150, paid towards purchase of Grounds,.....	1,129 94
Amount remaining in Treasury,.....	$17 76

On the 15th of September, 1859, an election was held, which resulted in the selection of the following

OFFICERS FOR 1860:—ABRAM CARNS, *President;* WM. W. FIELDS and JEFFERSON CRAWFORD, *Vice Presidents;* WM. E. CARTER, *Secretary;* JOHN D. CALLIS, *Treasurer;* and JOEL POTTER, JOHN WELSH, J. W. KAUMP, W. B. COLBURN and F. A. BEVANS, *Additional Members of Executive Committee.*

GREEN LAKE COUNTY.

The Society formerly known as the "Marquette County Agricultural Society," met January 22d, 1859, and passed the following resolution:

Resolved, That we change the name of the Marquette Co. Agricultural Society to "Green Lake Co. Agricultural Society."

Officers for the following year were also elected.

The Fair of the Society was held at Princeton on the 7th and 8th days of October. Number of persons who became members, 75. Whole number of entries for the exhibition, 185.

RECEIPTS AND DISBURSEMENTS.

Total of Receipts,.....	$207 65
Expenditures, including Instalment on Fair Grounds,.....	214 22
Balance against Society,.....	$6 57

DEBTS AND CREDITS.

Total of Debts on account of Premiums due, for the years 1857, 8, & 9,	$151 05
Credit by Sheeting on hand,	6 60
Total Indebtedness of Society,	$144 45

OFFICERS:—THOMAS COUNTRYMAN, *President;* J. W. VARS, *Vice President;* J. SHERMAN, *Secretary* and *Treasurer;* J. LUCE, *Librarian;* S. NEWTON, P. WICKS, Sen., D. LEE, and E. JANES, *Executive Committee.*

IOWA COUNTY.

The Annual Fair of this Society was held at Dodgeville on the 6th and 7th of October.

RECEIPTS AND EXPENDITURES FOR THE YEAR.

Total of Receipts,	$476 86
Expenditures, including $200 paid towards Fair Grounds,	542 25
Balance against Society,	$65 40

At the Annual Meeting, which was held Dec. 8, 1859, the following persons were elected,

OFFICERS FOR 1860:—Hon. H. M. BILLINGS, *President;* T. STEVENS, L. W. JOINER and JOSEPH ROBERTS, *Vice Presidents;* L. M. STRONG, *Secretary;* RICHARD ARUNDEL, *Treasurer.*

JACKSON COUNTY.

This Society held an Annual Fair at the Village of Black River Falls, on the 12th and 13th days of October.

RECEIPTS AND EXPENDITURES FOR THE YEAR.

Total of Receipts, exclusive of State Appropriation,	$113 00
Expenditures,	97 50
Balance in Treasury,	$15 50

OFFICERS:—SAMUEL HOFFMAN, *President;* D. J. SPAULDING, *Secretary;* J. V. WELLS, *Treasurer.*

JEFFERSON COUNTY.

The Annual Fair of the Jefferson Co. Agricultural Society, was held at Lake Mills, on the 21st and 22d days of September, 1859.

RECEIPTS AND EXPENDITURES.

Total of Receipts, including $200 from the State,.....	$360 36
Expenditures, including $153 paid on Premiums of '57 & '58,	309 36
Balance in Treasury, Nov. 21st, 1859,..	$51 00

OFFICERS:—MILO JONES, *President;* ROBERT FARGO, *Secretary;* D. M. ASPINWALL, *Treasurer.*

KENOSHA COUNTY.

The Kenosha Agricultural Society held its Annual Fair for 1859, on the Fair Grounds of the Society, on the 23d and 24th days of September.

The attendance was good, and most of the departments of the exhibition were well represented. Whole No. entries, 505.

The Committees on Horses and on Devon Cattle were particularly pleased with the number and superior quality of the animals presented for their examination.

The Department of Farming Implements, Machinery, &c., was not so full as could have been desired.

The Plowing Match proved an interesting feature of the exhibition, and the work was admirably done. The first premium on "Men's Plowing" ($8), was awarded to Horace Blackman, Esq., of Paris; on "Boy's Plowing" to Orville Rice, of Paris.

Fruit and Garden Products well represented.

A valuable Address was delivered by Hon. L. P. Harvey.

RECEIPTS AND EXPENDITURES.

Total of Receipts, including $200 from State,.....	$690 48
Expenditures,.....	410 00
Balance in Treasury Nov. 2d, 1859,.....	$280 48

OFFICERS:—J. D. MCINTYRE, *President;* H. H. TARBELL, *Secretary;* ALEXANDER BEATH, *Treasurer.*

LA CROSSE COUNTY.

The Second Annual Fair of the La Crosse Agricultural Society, held October 6th and 7th, proved quite successful—the number of entries being large, and the attendance good.

RECEIPTS AND EXPENDITURES.

Total Receipts, including $100 from State, and $51 in Treasury January 1, 1859,	$322 03
Expenditures,	365 35
Balance against Treasury, Nov. 26, 1858,	$43 32

OFFICERS:—MILTON BARLOW, *President;* B. E. BROWN, *Secretary* and *Treasurer.*

LA FAYETTE COUNTY.

The Second Annual Fair was held at Darlington, on the 21st and 22d days of September, and was highly creditable to the Society and County.

The entries were as follows: Horses, 91; Jacks and Mules, 11; Cattle, 35; Sheep, 10; Swine, 8; Field Products, 32; Garden Products, 43; Dairy and Household Products, 32; Domestic Manufactures, 15; Fruit, 9; Fancy and Ornamental Work, 23; Products of Mechanic Arts, 25; of the Fine Arts, 11; Miscellaneous, 55. Total, 401.

An excellent address was delivered by Col. C. M. Waring.

RECEIPTS AND EXPENDITURES.

Total Receipts,	$417 89
Total Disbursements,	405 69
Balance in Treasury, Nov. 5, 1859,	$12 30

OFFICERS:—SILAS A. DAVIS, *President;* NICHOLAS DUNPHY, SAMUEL COLE, and J. S. KELSO, *Vice Presidents;* ALLEN WARDEN, *Treasurer;* FRED. G. THEARLE, and P. A. ORTON, jr., *Secretaries.*

MANITOWOC COUNTY.

The Manitowoc County Agricultural Society was organized on the 5th of March, 1857, and held its First Annual Exhibition at Manitowoc, on the 3d and 4th days of October.

The Editor of this Volume, having been honored with an invitation to deliver the Annual Address, was present on the last day of the Fair, and is therefore able to testify from personal observation, that it was one of the most wide-awake, enthusiastic gatherings that he has had the pleasure of attending in Wisconsin.

The various departments of the exhibition were well filled with articles and animals of much merit, and everything connected with the Exhibition, gave evidence of more than ordinary taste and energy on the part of the Officers of the Society.

A large majority of the members of the Society are Germans, whose zeal in this noble agricultural enterprise might well serve as a model for the imitation of some of the older American societies. After the Address in English, Chas. Hottleman, Esq., of Manitowoc, delivered an appropriate and eloquent Address in the German language.

RECEIPTS AND EXPENDITURES.

Total receipts,	$575 75
Expenditures,	485 51
Balance in Treasury, Dec. 29, 1859,	$90 24

OFFICERS:—CHAS. ESLINGER, *President;* H. MCALLISTER, J. LUEPS, H. N. SMITH, C. KLINGHOLZ, J. E. PLATT, and C. HOTTLEMAN, *Vice Presidents;* WM. BACH, *Rec. Sec.;* C. W. FITCH, and C. PEAUME, *Cor. Sec.;* G. W. ADAMS, *Treasurer.*

MARQUETTE COUNTY.

The Marquette Agricultural Society was organized on the 6th day of August, 1859, and held its First Annual Fair, on the 12th and 13th days of October.

The Exhibition was well attended, and the number of entries was 149.

Ninety-six persons became members of the Society.

RECEIPTS AND EXPENDITURES.

Total receipts,...	$203 50
Expenditures,...	148 26
Balance in Treasury, Nov. 7,...	$55 25

OFFICERS:—WM. H. PETERS, *President;* G. J. COX, *Secretary;* C. S. KELSEY, *Treasurer.*

MONROE COUNTY.

This Society was organized July 12th, 1859, and held the First Annual Fair at Sparta, September 21st and 22d.

The attendance of citizens of the County was very large, and much enthusiasm was manifested.

The Exhibition in most of the departments was creditable to Society and County.

Whole number of entries, 167.

An appropriate address was delivered by G. W. Lincoln, Esq.

RECEIPTS AND EXPENDITURES.

Total of receipts,...	$102 00
Expenditures,...	33 40
Balance in Treasury, Nov. 9, 1859,...	$68 60

OFFICERS:—SAMUEL HOYT, *President;* Col. S. C. LYON, and W. P. AUSTIN, *Vice Presidents;* D. M. MCBRIDE, *Secretary;* L. S. FISHER, *Treasurer;* R. E. GILLETT, E. S. BLAKE, R. MCMAHON, H. A. LINK, and P. RAWSON, *Executive Committee.*

OZAUKEE COUNTY.

The Ozaukee County Agricultural Society was organized by a mass meeting of the citizens, held at Cedarsburg, on the 31st day of January, 1859.

The First Annual Exhibition was held at Cedarsburg, on the 11th day of October, and was, in the estimation of all interested, a decided success.

RECEIPTS AND EXPENDITURES.

Total of receipts,.....	$213 45
Expenditures,.....	180 26
Balance in Treasury, Dec. 19, 1859,.....	$33 19

OFFICERS:—WM. VOGENITZ, *President;* THEO. HARTUNG, *Vice President;* E. B. ADLER, and HUGO BUCLO, *Secy's.;* B. O. ZASTRO KUSOW, *Treasurer;* FRED HILGEN, JOSEPH TROTTMAN, FRED. SCHATZ, B. O. Z. KUSSOW, and E. STALLMAN, *Executive Committee.*

PIERCE COUNTY.

The Pierce County Agricultural Society was organized at Prescott, on the 15th day of March, 1859, by the adoption of a Constitution, and the election of the necessary officers.

The First Annual Fair,—which was held at Prescott, on the 14th and 15th,—owing to rainy weather, was not as successful as had been hoped. Under the circumstances, it was creditable, however, and accomplished great good in the way of awakening new interest among the farmers, and stimulating the Officers of the Society to make a greater effort the next year.

The Annual Address was delivered by J. W. Hoyt, to a church-full of highly intelligent people.

The Society having made section 18, of chapter 80, of the Revised Statutes, available in securing from the County Board an appropriation of $100, the $100 received from the State,

added to the usual sources of income, placed the finances of the Society in a good condition.

RECEIPTS AND EXPENDITURES.

Total of Receipts	$259 50
Expenditures	159 50
Balance in Treasury, Oct. 18, 1859,	$100 00

OFFICERS:—O. T. MAXON, *President;* one *V. P.* from each town in the county; GEO. MAY POWELL, *Recording Secretary;* OLIVER GIBBS, Jr., *Cor. Secretary;* J. H. SOUTHWICK, *Treasurer.*

RACINE COUNTY.

This district held an annual exibition at the village of Union Grove, on the 21st and 22d days of September.

Whole number of entries, 457. The department of Live Stock was particularly well represented, and the superiority of the animals exhibited afforded unmistakable evidence that the farmers of Racine County are resolutely determined to bear off the palm in this important branch of husbandry.

RECEIPTS AND EXPENDITURES.

Total Receipts	$530 75
Expenditures,	435 99
Balance in Treasury, Oct., 24, 1859,	$ 94 76

OFFICERS:—Rev. THERON LOOMIS, *President;* EZRA REED, *Vice President;* ALBERT G. KNIGHT, *Secretary;* WM. V. MOORE, *Treasurer.*

RICHLAND COUNTY.

The Richland County Agricultural Society held a very successful Fair at Richland Centre, on the 21st and 22d of Sept. The people turned out *en masse*, and the farmers proved their skill and enterprise by good displays of all sorts of articles usually exhibited at County Fairs.

Appropriate and valuable addresses were delivered, by Messrs. L. G. Thomas, and A. H. Bush.

RECEIPTS AND EXPENDITURES.

Total of Receipts,	$304 25
Expenditures,	292 42
Balance in Treasury, Oct. 25th, 1859,	$ 11 83

Officers:—Hon. William Dixon, *President;* Geo. D. Lybrand, *Secretary;* W. H. Down, *Treasurer.*

ROCK COUNTY.

The Rock County Agricultural Society and Mechanics' Institute held, during the year 1859, first, a Festival, on the 4th of July, and secondly, a regular Annual Fair, on the 20th, 21st and 22d days of September.

The Festival was largely attended, but resulted in small profit. The Fair was a sucess, proving that in spite of hard times and all other adverse influences and circumstances, the farmers of old Rock have the ability and the will to give their Society a front rank among the first in the State.

Whole number of entries at Fair, 700.

RECEIPTS AND EXPENDITURES.

Total Receipts,	$1,403 00
Expenditures, including $629 10, paid towards indebtedness of the Society,	1,381 73
Balance in Treasury Oct. 26, 1858,	$21 96

Officers:—Hon. J. F. Willard, *President;* Charles R. Gibbs, *Secretary;* Jerry A. Blount, *Cor. Secretary;* W. Hughes, *Treasurer;* together with six *Vice Presidents* and thirty-two *Directors.*

SAUK COUNTY.

The Annual Fair of this Society occurred on the 21st and 22d days of September, and was well attended by both exhibitors and people.

Number of entries, 365. Number of exhibitors, 104.

RECEIPTS AND EXPENDITURES.

Total Receipts, including $100 from ast year,.....	$381 43
Expenditures, ...	319 00
Balance in Treasury Dec. 26, 1858, ...	$61 93

OFFICERS.—A. W. STARKS, *President;* R. H. DAVIS, J. S. STRONG and F. K. JENKINS, *Vice Presidents;* M. C. WAITE, *Secretary;* W. H. THOMPSON, *Treasurer*, and an *Executive Committee* consisting of one member from each town in the county.

SHEBOYGAN COUNTY.

The eighth Annual Fair of the Sheboygan Society was held at Sheboygan Falls, September 14th and 15th; at which time over $200 was paid out in premiums.

RECEIPTS AND EXPENDITURES.

Total Receipts during the year, ending January 1st,.....	$496 53
Expenditures, ...	402 99
Balance in Treasury, ...	$94 54

OFFICERS:— JOHN WHITING, *President;* G. S. GROUS, *Secretary*, and G. W. BARNARD, *Treasurer.*

ST. CROIX COUNTY.

The St. Croix County Agricultural Society held its First Annual Fair at Hudson, on the 20th and 21st of September. The weather was delightful, and the Exhibition alike creditable to the Society and to the county.

Whole number of entries, 271.

The address was delivered by J. W. Hoyt, and was listened to by a large and brilliant concourse of people.

RECEIPTS AND EXPENDITURES.

Total Receipts,	$292 38	
Due from State,	100 00	
		$392 38
Expenditures,		140 43
Balance in favor of Society,		$151 95

OFFICERS:—OTIS HOYT, *President;* WARREN WIEKS, JNO. THAYER, L. H. POMEROY, *Vice Presidents;* G. B. SALMON, *Secretary;* ALFRED GROSS, *Treasurer;* STERLING JONES, ROSWELL HOLMES and JAS. KEEP, additional members of the *Executive Committee.*

TREMPELEAU COUNTY.

The First Annual Fair of the Trempeleau County Agricultural Society, was held at Galesville, on the 21st and 22d days of October. One hundred and sixty-eight entries were made, and the articles and animals were generally of good quality.

It is worthy of notice that those who had drawn prizes, donated the same to the Society, without exception, so that the expenditures were almost nothing.

RECEIPTS AND EXPENDITURES.

Total Receipts,	$102 00
Expenditures,	5 66
Balance in the Treasury,	$ 96 34

WALWORTH COUNTY.

The Annual Fair of 1859, was held upon the Fair Grounds of the Society, in Elkhorn, on the 21st, 22d and 23d of September, and was, as usual, largely attended.

Whole number of entries, 275.

RECEIPTS AND DISBURSEMENTS.

Total of Receipts, including balance in Treasury Jan. 1, '59,	$1970 18
Expenditures,	1282 63
Balance in Treasury,	$686 56

OFFICERS:—OTIS PRESTON, *President;* R. CHEENEY, *Vice President;* EDWARD ELDERKIN, and E. FROST, *Secretaries;* E. HODGES, *Treasurer.*

WASHINGTON COUNTY.

The First Annual Fair of this Society, occurred on the 20th and 21st of October, 1859, at West Bend, and more than exceeded the most sanguine expectations of its members.

RECEIPTS AND EXPENDITURES.

Total Receipts,	$242 08
Expenditures,	193 88
Balance in Treasury,	$ 48 20

OFFICERS:—Hon. D. W. MAXON, *President;* F. O. THORPE, *Secretary;* WM. REHN, *Treasurer.*

WAUKESHA COUNTY.

This Society held its annual Exhibition at Waukesha, on the 21st, 22d, and 23d days of September. Owing to rainy weather, and the proximity, both in time and place, of the State Fair, the exhibition was not so large as was desirable; still the members express themselves as by no means disheartened, and are confidently expecting to have an exhibition in 1860, that shall add new laurels to those already won by the Society.

RECEIPTS AND EXPENDITURES.

Total Receipts for the year 1859, (including $500 borrowed from the School Fund,)	$1,095 28
Expenditures, (including 566,78, paid on notes)	1,097 33
Amount due Treasurer,	$2 05

OFFICERS.—THOMAS P. TURNER, *President;* GEO. C. PRATT, *Secretary;* JOHN FORBES, *Treasurer.*

WAUPACA COUNTY.

The Executive Committee of the Waupaca Agricultural Society, have published so good a report, not only of the proceedings of the Society, but also of the agricultural condition of the County, that we regret very much the want of space which forbids its republication in this Volume.

The largest yield of Corn in the County, for the year 1859, was 89 bushels of ears, the drought and the frost having conspired to prevent the usually large yield. The earlier varieties did the best, though some fields of Dent got ripe. The King Phillip and the small Yellow Flint did pretty well, but the best Corn, all things considered, was the "White Squaw," an eight rowed variety, with large kernel, small cobb, and ears 8 to 14 inches in length.

Oats were but a moderate crop. G. W. Taggart raised on a piece of low land bordering a marsh, in process of drainage, 3084 pounds per acre.

Millet and Hungarian Grass have proved to be good forage crops, but are thought to be more exhausting to the light soils than Rye or Indian Corn.

The Annual Fair was held on the 20th and 21st days of September.

RECEIPTS AND DISBURSEMENTS.

Total of Receipts,	$230 50
Expenditures,	177 45
Balance in Treasury, Dec. 24, 1859,	$53 05

OFFICERS.—TYLER CALDWELL, *President;* L. B. BRAINARD, *Acting Secretary;* L. L. POST, *Treasurer.*

WAUSHARA COUNTY.

The Agricultural Society of this County, numbers 7 Life Members and 63 Annual Members, and is rapidly growing in favor with the people of all classes and occupations. Of the Annual Fair for 1859, which we attended, for the purpose of delivering the Address, we are able to speak from personal observation. It was held at Wautoma, on the 12th and 13th of Oct. and proved a success, notwithstanding the unfavorableness of the weather. The show of Fruits, Field Products, and Garden Vegetables, was particularly gratifying, the apples, plums and even grapes and peaches, surpassing anything that we have witnessed at the County Fairs of this State.

The show of Stock was also fair; and the good ladies did themselves honor, as they almost always do on such occasions.

Whole number of entries, 167.

RECEIPTS AND EXPENDITURES.

Total of Receipts for the year,.. .....$216 83
Expenditures not reported.

OFFICERS:—JAMES L. HOSFORD, *President;* one Vice President from each town (18); Dr. M. BARRETT, *Secretary;* ALVAH NASH, *Treasurer;* and an Ex. Com. of five members.

WINNEBAGO COUNTY.

The Fifth Annual Cattle Show and Fair of this Society, was held at the city of Oshkosh, on the Grounds of the Society, September 22d and 23d, and was considered demonstrative of a steady growth of agriculture in the County.

The articles and animals in the several departments of the Exhibition are reported to have been highly satisfactory to the committees of Judges, particularly in the classes of Thoroughbred Cattle, and Farm Implements.

An able Annual Address was delivered by Martin Mitchell, Esq.

RECEIPTS AND EXPENDITURES.

Total Receipts,.....	$392 58
Expenditures, includiug $83 75 on premiums of '57 & '58,..	394 41
Balance against Society,.	$1 83

OFFICERS:—WM. M. GREENWOOD, *Secretary;* other names not reported.

FRUIT-GROWERS' ASSOCIATION

OF WISCONSIN.

ANNUAL EXHIBITION.

The Association held its Annual Exhibition in union with the State Agricultural Society, at Milwaukee, Sept. 26th to 30th. The show was good, considering the unfavorable season for fruit—surpassing the expectations of the most sanguine. During the evenings of the State Fair, meetings for discussion were held in the City Council rooms. These were interesting and profitable, and we regret that no record of them was preserved.

ANNUAL MEETING.

The Annual Winter Meeting convened, pursuant to notice, at Metropolitan Hall, Whitewater, Thursday, Jan. 19th, 1860, at 3 o'clock, and was called to order by the President, A. G. Hanford.

A telegram was received from the Secretary, Mr. Gifford, stating his inability to be present, when, on motion,

O. S. Willey was appointed Secretary, *pro tem.*

The attendance was not large, though a considerable portion of the State was represented. An interesting show of Apples was made, including many leading popular varieties, and some comparatively new sorts, among which were fine specimens of "Northern Spy," and "King of Tompkins County."

The following committees were appointed :

On Nominations.—Starin and Sax, of Whitewater; Atwood, of Lake Mills.

On Business.—Brayton, of Aztalan; Willey, of Janesville; Plumb, of Madison.

Letters of regret from absentees were read. Also valuable papers from distinguished pomologists and fruit-growers, in our own State and abroad, were presented, and will duly appear in this volume.

The Business Committee reported, as the first subject for discussion,

SOIL AND SITE FOR THE ORCHARD.

J. C. Brayton said—Fruit trees derive their chief support from the atmosphere. Soil not so essential, but must be dry. Sandy soil proved good on this account; clay soil best, if well drained. According to Liebig, should contain lime. Depth important; would have it dug up three feet deep. Draining of first importance; making 10° difference in temperature, the year round ; promotes early growth and the ripening of the wood.

H. L. Rann cited cases in favor of dry sandy soil for peaches.

J. H. Starin concurred in the importance of dryness, as promotive of early growth and ripening ; believed this essential, and that sandy soil owes its success to this condition. Draining important for same reason.

J. C. Plumb did not believe a poor, sandy soil sufficient for the proper development of the fruit tree.

H. A. Congar concurred with Plumb as to deficiency of sandy soil, and with all, concerning importance of drainage; offered the following propositions:

1st. That it is of first importance that the orchard soil should be deep, rich, and dry.

2d. That a stiff retentive clay soil should, in all cases, be thoroughly underdrained.

Concerning Site.—Congar preferred rolling land; would plant in a valley as a last resort.

Brayton also preferred the hill because best drained; level land good if well drained.

Plumb was decidedly in favor of "the hill," for these reasons:

1st. It secures better drainage, which tends to prevent frost. 2. It insures ventilation or circulation of air. 3. High lands produce heavier and richer fruit.

Brayton—In Northern Illinois, best trees on high, sandy land.

FIRST DAY—EVENING SESSION.

Aspect, Protection, &c.—Brayton thought southerly aspect bad for trees whose buds start early. Cold, dry air, most injurious; west winds, on that account objectionable.

President Hanford—Would choose a moderately rich, dry loam, an elevated site, and a western or south-western aspect. In winter of '56 and '57, some of my trees died on northern exposure, but none on any other; still, northern does well if trees sheltered by belt of timber. Make trees self-protecting, by forming low heads.

Congar thought protection of little importance; would plant close, and make low heads. Were not trees healthier without shelter?

Several members thought not.

Plumb—Do not believe in necessity of protection from winds; they equalize the temperature of the atmosphere—a very important thing to be done—let them blow. Have given much attention and study to this subject; have notes of numerous observations. Would plant on crown of hill. Protection from winter and spring *sun*, most important. Many trees are killed by alternate thawing and freezing; bark expands and then contracts under influence of sun's rays in February and March, and finally cracks. Protect by strips of board, wrappings of paper, straw, &c.

Cited cases to prove his position correct.

Starin and Congar thought moisture essential as preventive of ordinary effects of extreme cold.

Congar objected to east winds as most drying.

Brayton—That cannot be, since the temperature in April, when they prevail, is mild.

Starin—Protection has availed me little; my trees have died without regard to it; unripeness of wood the cause.—Must cultivate *early*, but not *late* in season, so that the wood may ripen.

Protection to the Roots.—Plumb—Must protect roots in winter; would throw up mound of earth, flat on top, and cover with litter or leaves—nature's protection.

Brayton concurred in importance of mulching; would prefer rotted-wood or saw-dust, as these would not blow away like leaves; add lime and ashes. Mulching would aid the ripening and prevent terminal bud from starting in the fall. Would also mulch strawberries, raspberries and currants. Objected to stimulating manures.

Willey—Mulching facilitates ripening; Bleeker's Gage Plum, when mulched, had ripened two weeks earlier than those not mulched.

Plumb concurred; mulching hastened growth, but did not prolong it. Would plow beam deep; hastens growth and does not occasion second growth.

Starin—Would not mulch until ground is warmed; it retards early growth. My plums, except the Egg variety, have all died, though mulched.

Brayton—Many cultivators do not mulch far enough from tree to do the smaller roots—which are chiefly benefitted—any good.

Deep Planting.—Plumb—Most persons plant *too deep.*—Would dig down to loose sub-soil, and plant three inches higher than tree stood in nursery.

Brayton—Would plow up a ridge and plant on that—partic-

ularly where drainage is nececsary and cannot be better secured.

Congar—Dwarf pears *require deep planting.* Would have a dry soil, and plant upon level. Raised question of

AGE AND PROPER TIME OF PLANTING.

Congar.—The apple tree should not be over two years old, the pear and peach but one from bud or graft. Can see no reason why we may not plant in the fall here as in Illinois or New York. True, trees in nursery do not always ripen their wood early enough to admit of it, and this is the reason so many of our imported trees fail, but the objection may be overcome.

Willey—Also believe in planting *young* trees ; because, 1st, We get more of the roots. 2d. Can form "to our liking." 3d. No stakes are needed. Would dig deep holes ; fill in coarse gravel ; cover with rich, prairie loam, and plant just as tree stood in nursery row. Would mulch well, as that tends to keep roots near the surface, where they may be controlled by fertilizers—of which ashes and lime are needed for prairie soil. Roots of dwarf pears, run near surface, and tree should be worked very low.

Brayton—Opposed to fall planting ; the roots cannot heal and establish themselves without leaves. Dwarf pear tender above ground ; hence, would plant deep. Trees received from nursery in the fall should be covered up, root and branch, for winter. Much blame attaches to neglect of trees after taking up ; roots must be protected from sun immediately, and ever.

Hanford—Roots will heal and form without leaves—even if simply "heeled in ;" have seen it repeatedly. Know an instance in which 50 trees were frozen up solid in the earth the day after planting—all lived and flourished but one or two. Fall planting, however, should be *early ;* some care should be used to bring earth in contact with roots, &c., as in spring. Just before winter sets in, would raise a mound of fifteen inches about the stem, and mulch the roots with coarse ma_

nure or litter. Spring planting should also be *early;* if not convenient to prepare ground at right time, take up trees and heel them in ; in all cases, carefully mulch immediately after planting. Thorough stirring soil, frequently, best mulch, but apt to be neglected.

Plumb—Plant in September, or early October, and have no trouble ; must give roots chance to form. Mulching important as preventive of evaporation of vital sap, by dry, freezing, winter weather. If we plant in spring, trees should be taken up before sap starts, and may then be planted at leisure. The *well-doing,* more important than size or age. What we want is the roots. Would cut back some in all cases, and usually three fourths of top.

Congar would have all the roots, then leave all the tops ; hence preferred *young* trees.

SECOND DAY—MORNING SESSION.

The members met at 9 o'clock A. M., President Hanford in the chair. Subject—

EVERGREEN PLANTING.

The President—Recommend early spring planting. Have practiced taking up as early as possible. If properly handled may be as readily moved as apple trees. Have planted nursery trees after growth commenced ; would not commend summer planting. Much loss usually attends planting from the forests and marshes; over $200 worth of such evergreens were sold in Waukesha last spring—few or none now living.

Plumb—Concur; earnestly recommend special care of roots; a few moments influence of sun upon the spongioles might ruin the tree; best time when buds first break—early May—would leave a ball of earth on roots to insure success. Evergreens from woods and marshes, as usually sold, not worth buying.—During past two years there have been sold in Madison, over $1000 worth of such trees; almost none now living. State has been humbugged long enough with wild evergreens.

Hanford read letter from Samuel Edwards of Illinois, on subject of cultivation, &c., of evergreens.

Brayton—The great secret of success is in retaining the fibres; one minute's sun may destroy them; should be covered as soon as out of the ground. If taken from woods must be very small. Do not believe in as early planting as some; have had 50 per cent. less loss after growth had commenced. July answers well, but great care is required at that time. Always mulch as soon as planted.

Congar—If planted early, and with roots retained, they seldom die; cannot countenance late planting under any circumstances. Layers from the forest of little worth.

Willey—Early planting is safest for people in general. Difference between nursery and forest evergreens not sufficiently understood; the first has a fine mass of roots, the latter very few. Frequent transplanting increases roots and improves their chances for living. Any good garden soil adapted. Mulch with decayed chips or coarse litter.

Hanford would hoe the soil twice a week until past midsummer.

Plumb would have thorough drainage ; dig deep holes, and fill with coarse gravel and sand, with supply of compost of sand and peat loam; applicable to every variety in transplanting.

DISEASES AND INSECTS, AND THEIR REMEDIES.

A great variety of insects infest the orchards of the Northwest, but a large share of the damage is chargeable to two or three, whose habits and "weak points" should be studied until a complete mastery over them is gained by the fruit-grower.

The Bark Louse.—Congar—The Bark Louse is confined to old, neglected orchards. Would dig infested trees and replant; will never have them in nursery. If my trees are not sold at five years of age, I dig and burn them.

Brayton—Bark Lice only plenty in wet or bad soils ; do not attack healthy trees. To destroy, cut off all large limbs,

and wash remainder of tree with lye (better than soap), any time after coldest weather is over until middle of April. First to tenth of June, throw slacked lime upon the top, every two or three days, while dew is on; hatch about this time, and are actively moving about.

Plumb—My first remedy is stimulation to new growth by proper fertilizers; second, to apply a wash or varnish of tar and oil, warm; third, to shorten back whole top, and varnish. Gas tar kills the leaves of trees, but not the tree; would apply lye-wash also. Am not discouraged by lice; they have been a pest in New England for sixty years, but have not stopped the growing of fruit.

Hanford—Believe they are natural to the apple-tree; are the legitimate results of wet soils, neglected culture, severe winters, over-bearing, &c.

Starin—If in very bad condition, would cut trees down; if not, wash with mixture of one-third soft soap, two-thirds water, with one pound of sulphur added to each pailful. Believe lice will attack healthy trees. Have had them in my orchard for a long time, but effects more marked since 1855 and 1856. Do not recommend an indiscriminate destruction of all trees infested by them; think we can do better.

Hanford—Every plant, tree and animal has its parasite, which lives and thrives upon its substance. When from disease or any other cause, checked in growth, the parasite takes possession and increases to an injurious extent. The Bark Louse is indigenous to the apple tree, is no new thing, its existence dating with the tree itself; is often found on apparently healthy trees, yet not in great numbers, and on such do not think it will gain the ascendency. It thrives on sickly trees, as do vermin upon the poor and diseased ox or calf. I asked a farmer of good judgment and large experience, what he would do for an animal in this condition. He replied, "give an extra ear or two of corn." In other words, feed and flesh up the animal, and the lice will disappear. So with lousy apple trees. Winter prune, wash with soft soap, weak lye or ashes; or, better, with Sal Soda,

in early spring, and again in June. Manure and stir the soil. If the soil is wet, ditch or underdrain. If you crop your orchard, let it be with low, hoed crops—potatoes, roots, beans or corn, but not with sowed grain. Your trees will soon outgrow the lice. If you wish to rid them at once, take them in early spring before the buds swell, and apply the Tar and Oil mixture, pepared thus : Equal parts Linseed Oil and common Tar mixed by stirring while heating ; when cool apply with a painter's brush a thin coat to every part of the tree where lice are found, omitting so much of last year's growth as was made after first of June, as upon this no lice will be found. Applications first of June, of lime, also ley, tobacco water, or Quassia water, will kill the young lice as far as it comes in immediate contact with them.

The Green Aphis, which occasionally attacks the young shoots, may be effectually destroyed by dipping in, or thoroughly syringing with quassia water, once or twice. Take one pound quassia chips and eight gallons water ; boil an hour. Tobacco water similarly prepared, is also good.

SECOND DAY—AFTERNOON SESSION.

The Borer.—J. C. Plumb—The home of the borer is not in healthy wood, but diseased portions of the tree. The eggs are deposited in cracks found in the body of the tree—would prune the tree from frost cracks and keep in healthy condition ; they never kill a tree directly. Apply a peck of good ashes immediately around the tree.

Congar—Any thing that will destoy the eggs, will be effectual. Apply lye wash.

A. G. Hanford.—There are several kinds of Borer met with in our orchards. The one concerning wnich most alarm is now felt throughout the West, I am inclined to regard as distinct from any described by Entomologists as "Apple Tree Borer." On the south and south-west sides of apple trees, especially those with long, naked trunks, strips of bark, extending the entire length of the body, are discovered ; which,

upon removing, numbers of borers are found, having entirely destroyed the inner bark and sap wood. The depredations of the borer, are regarded as the *cause* of the injury, which I think is not true. The injury was occasioned during the winter or spring, and very largely during the severe winters of '55 and 56. I am disposed to regard this borer as working in dead or diseased wood. The remedy will readily suggest itself. *Low tops, which shall shade the trunks*, and thus *prevent* the injury —remove the dead bark, and cover with grafting wax. Another borer, which works in the healthy tree, and is often very destructive, is usually met with near the ground, though occasionally higher up, sometimes in the forks and limbs of the tree. The eggs are deposited by a striped beetle in June and July, upon the bark, and the worm, when hatched, eats its way into the inner bark, where they remain the first year, working their way the second into the wood, and the third it emerges in the form of a beetle, to again propagate its species.

Remedies—build brush fires in the orchard in the evening, during June, which will allure the beetles, as well as many other insects to their destruction; and wash the trees at same season with soft soap. Examine the bark for the worms, which in young trees may be readily discovered the first year by the dark, dead appearance of the bark ; afterwards, by the dust thrown out by the worm. They will almost always be found on the south-west side; prompt attention will be found economy. With a knife, shoe-maker's sewing awl, or flexible wire, cut out, or insert a small piece of camphor, and close the hole with grafting wax. Another species works only in the small limbs and branches, entering to the heart and working downward. As the period for its change to a chrysalis approaches, it cuts off the limb as neatly as it could be done with a saw, and thus is enabled to enter the ground and emerge a parent beetle. Use the knife as before, and gather up and burn the limbs which fall.

SECOND DAY—AFTERNOON SESSION.

The Committee on Nominations made their report, and the Society proceeded to elect by ballot. The following gentlemen were unanimously elected:

President—J. C. Brayton, Aztalan.

Vice Presidents—H. Crocker, Milwaukee; F. W. Loudon, Janesville; James Judd, Waupun.

Recording Secretary—O. S. Willey, Janesville.

Corresponding Secretary—A. G. Hanford, Waukesha.

Treasurer—O. P. Dow, Palmyra.

Executive Com.—J. C. Plumb, Madison; H. A. Congar, Whitewater; James Ozane, Sumner.

The following resolution was offered by J. C. Plumb:

Resolved, That for the sake of more exact and general information relating to the orchards, vineyards, and other fruit plantations of our State, a committee of three members be appointed, who shall individually or collectively, make a thorough and faithful examination of as many as twenty-five different orchards, vineyards, or fruit gardens in our State, and make a report to the Society, at their next annual meeting, upon the following points, to wit:

1st. The elevation and aspect.

2d. If sheltered, and on which side, by belts of trees, &c. If near and open to the influence of any large bodies of water.

3d. Of the soil and sub-soil.

4th. Of the preparation, planting and culture.

5th. How long out; what varieties; general cultivation, prospects, &c.

After considerable discussion the resolution was carried.

On motion, J. C. Brayton, of Aztalan, A. G. Hanford, of Waukesha, and J. C. Plumb, of Madison, were appointed said committee.

SECOND DAY—EVENING SESSION.

VARIETIES OF FRUIT.

(For those marked, *, see Transactions of 1855.)

SUMMER APPLES.

Early Harvest.—J. C. Brayton—With me it is semi-hardy; numbers sometimes killed.

Plumb—It is hardy, under favorable circumstances; must have a dry, heavy soil, of moderate richness; have the top very low; body shaded; on elevated ground, with free circulation of air, it has succeeded well.

Hanford—Tree profitable; very productive every other year, and bearing moderately intermediate years; indispensible; no other variety to take its place; must have dry ground; never plant it upon that which is not.

Salisbury—It does well when worked in the top, or anywhere above the ground.

Brayton—Any slow grower is improved by grafting.

D. Mathews—Have found it good in every respect.

Recommended in favorable positions and soils.

Early Red.—Brayton—It has no reliable history; came from Indiana; is a very rapid grower; long, slender shoots; distinctive character, very thorny, like seedlings, hardy.

Plumb—It ranks among the very hardiest orchard trees; moderate early bearer; fine flavor and appearance; one of the the hardiest; thorny. The true early red is not found described in any of the fruit books; it is probably a western fruit.

Hanford—Perfectly hardy as an orchard and nursery tree; not fruited it.

*Red Astrichan**—Hanford—Is a valuable cooking apple; rather acid for the dessert; bearing moderatelywhile young.

G. J. Kellogg—Promises well.

Willey—Tree is hardy; rapid grower;early bearer.

Recommended for general cultivation.

Early Joe.—Hanford—Tree hardy, slow growth while young; bears well, fruit unequalled. Should be eaten from the tree, hence not planted largely. Well adapted to amateur culture.

Willey—Find it hardy; of slow growth, while young, but gains in vigor with age. An early bearer and indispensable in every garden list.

Sops of Wine.—Brayton—Hardy, good, very beautiful.

Hanford—Tree thrifty, fruit fine for dessert or cooking, heavy annual bearer.

Willey—Tree is among the best in growth and hardiness.

Recommended for general culture.

Carolina Red June.—Kellogg—Is doing well with me yet.

Hanford—Slow growth, hardy, fruit fine.

Starin—Very productive, fruit fine, keeps long for its season.

Matthews—Does well in all respects.

Plumb—Good and handsome, tree moderate grower, a little tender.

Recommended for general cultivation.

AUTUMN APPLES.

Duchess of Oldenburgh.—Hanford—Handsome fruit, tree hardy, an early bearer, does well every where.

Matthews—Does well in every respect.

Kellogg—Hardy and promises well.

Recommended for general cultivation.

Maiden's Blush.—Tree good and fruit fine.

Hanford—Bears early, productive.

Matthews—Does well with me.

Plumb—Good and beautiful, but tender in tree.

Fall Orange.—Hanford—Good, hardy tree, fruit not of finest quality, fine grower, productive, known also as "White Graft."

Brayton—"Very good."

Matthews—Does well in every respect.

Plumb—Good nursery trees.

St. Lawrence.—Kellogg—Promises well with me.

Hanford—Tree good grower, not an early bearer, fruit best.

Brayton—Tree very hardy, resembles the Fameuse in growth. slow in coming into full bearing.

Willey—Is hardy, an early bearer, fruit among the best.

Recommended for general cultivation.

Jersey Sweeting.—Hanford—Tree does well in my locality, though usually considered hardy; fruit "best," exceedingly productive, willing to replant every few years. A variety cultivated in Waukesha county as "Van Vleck's Sweet." Is probably "Hog Island Sweet." Tree more hardy, very productive, fruit excellent, ripens a little later, and keeps longer.

Brayton—Harper's Sweet appears the same as described by Mr. Hanford. Jersey Sweet too tender.

Plumb—Good, but superseded by more vigorous and hardy sorts.

*Rambo.**—Brayton—Tree tender.

Plumb—Just as good in Wisconsin as East, if planted on the crowns of the hills where the wind blows freely, to ripen up in the fall.

*Fall Wine.**—Brayton—Proved tender since the hard winters.

Plumb—Excellent and productive, tree moderate grower and a little tender when young.

Hanford—Tree does well in my locality, fruit fine.

*Autumn Strawberry.**—Starin—Fruit very fine.

Plumb—Promises well, but think it not yet well tested in the West.

Colvert.—Starin—Hardy, productive, fine grower, large, fine appearance; fruit, second quality.

Matthews—Does well in all respects.

Willey—One of the best nursery trees; of fine form.

Hanford—Tree hardy, fine grower and productive; a cooking apple.

WINTER APPLES.

*Dumelow's Seedling.**—Starin—Good grower; most productive variety I have; inclined to ever bear.

Hanford—Tree hardy; a cooking apple; very tart.

Plumb—Firm, tart, long-keeping; fine formed fruit; tree vigorous, spreading and hardy; will prove one of the most profitable for market purposes.

*English Russet**—Plumb—One of the best of apples; tree late grower and tender, except upon high and dry soils.

Hanford—Should be planted only in favorable locations.

Willey—Has proven very tender upon undrained prairie soils.

*Baldwin.**—Brayton—Nursery trees all killed; shy bearer.

Hanford—Shall propagate no more of the trees, except worked standard high; fruit variable; sometimes good, often affected with bitter rot.

Willey—Too tender in nursery; have not propagated any for three years.

Plumb—Almost a total failure in the strong soils of the North west, yet the specimens fruited by us are fully equal to their eastern reputation.

*Domine.**—Plumb—Very productive; good quality and keeping; vigorous; valuable for light sandy soils.

Starin—Productive; early bearer; tree rather tender.

Hanford—Tree good grower; rather tender; comes into bearing early; productive fruit, not of high quality; would not plant largely.

Salisbury—Would discard it.

*Red Romanite.**—Brayton—Hardy.

Hanford—Tree hardy; quality of fruit poor.

Plumb—Extremely hardy, and adapted to the prairies as a market fruit for spring shipping.

*Herefordshire Pearmain.**—Plumb—Super-excellent for high and dry, gravelly soils; worthless on low lands; fruit of the highest excellence for family use.

Starin—Trees stand well, uninjured.

Brayton—Has been damaged very little; productive.

Hanford—Tree uninjured; fruit of the finest quality.

Rawle's Janet.—Brayton—Injured on the north-west side, and since died. Should remove one-half the young fruit.

Starin—Does well.

Hanford—Does well with me, not productive while young, trees uninjured.

Plumb—Good, hardy and productive, yet seems to want vigor of tree to make it popular for extensive culture.

Jersey Black.—Plumb—Very vigorous, hardy and productive, one of the best fruits I have—little known.

Northern Spy.—Starin—Tree proves hardy and healthy in bearing eight years after planting.

Plumb—One of the best of apples, upright, quite hardy, requires age to bring it into bearing.

Willey—Trees have been much damaged in southern prairie aspects.

Vandervere, Syn. "*Vandervere Pippin.*"—Salisbury—Second-rate fruit, would not recommend it.

Plumb—Good and beautiful, especially on light gravelly soils where it grows to perfection—hardy and productive.

Hanford—Would not be without it in my locality—have had it for ten years without a blemish.

Willey—Tender in the nursery.

Brayton—Would not recommend it on any soils; proven too tender.

Blue Pearmain.—Hanford—Unproductive, tree, hardy; fruit good.

Brayton—Approaches Æsopus Spitzenburg ln flavor, find it hardy in nursery, not subject to blow from trees.

Plumb—Large and beautiful, but unproductive and unprofitable.

Wagener.—Brayton—Fruit No. 1—tree first class.

Hanford—Good grower and hardy ; fruit requires thinning.

Plumb—Tree grows late on heavy soils, recommended for general cultivation.

Roseau.—Brayton—More hardy than the Crabb ; no better bearers found, "good."

Starin—Bears young, very hardy, improves by leaving on the tree till 15th of October.

Pomme Grise.—Brayton—Fruit very good, hardy, only objection, size—fruit very fine, best of the Russets ; needs high culture.

Kellogg—Tree and fruit "best."

Starin—Does well.

Salisbury—Very hardy.

Hanford—Tree hardy, productive, fruit rather small, but good. Recommended for general cultivation.

*English Golden Russet.**—Starin—Tree hardy, good rower, (all Russets should be packed in tight boxes or barrels).

Plumb—Succeeds well everywhere, fine for the prairie and other heavy, strong soils.

Matthews—Does well in all respects.

Hanford—An exceedingly valuable variety for the West, tree and fruit excellent.

*Talman's Sweet.**—Starin—Good bearer, tree hardy ; "first best," as sweet.

Plumb—Good and profitable.

*Fameuse.**—Starin—Tree hardy, invaluable.

Plumb—Fruit of highest character, delights in rich dry soils.

SATURDAY—MORNING SESSION.

President Brayton in the chair:

On motion of A. G. Hanford,

Resolved, That the Society offer the following premiums, on tree plantations and seedling fruits:

For the best orchard of apple trees, of not less than 50 trees, planted Spring or Autumn of 1860, to be awarded in Autumn of 1863, $10.

For best pear orchard of not less than 25 standard trees, planted and awarded as above, $10.

For best dwarf pear orchard of not less than 25 trees, $10.

For best plum orchard of not less than 25 trees, $10.

For best orchard of 25 cherry trees, $10.

For the best fruit garden, $10.

For the best seedling apple of any season, of decidedly superior merit, hardy tree—six specimens to be exhibited together, with history of tree, origin, growth, bearing characteristics, &c., and presented to the Society for three years, $10.

For the best seedling pear, plum, cherry, currant, blackberry or strawberry, equal, or superior to those now cultivated of a similar character, and worthy of general cultivation, $10.

For the best seedling grapes, equal, or superior to the Isabella, and ripening in the open air by the middle of September, $10.

For the best seedling gooseberry, equal to Houghton's seedling in hardiness, productiveness, and exemption from mildew, larger and better flavor, $10.

For the largest number and best growth of evergreens, not less than 25, planted spring or autumn of 1860, and in most thrifty condition in autumn of 1863, with an account of method of planting and culture, $10.

A bottle of gooseberry champagne from F. W. Loudon, (one of a sample sent to the society at the winter session, Jan. '59,) was opened—the association being in committee of

the whole. Though the cork wouldn't "fly," pronounced "good," if not the best.

Through a mistake, the bottle had been kept standing, and the effervescence had passed through the cork, as it is apt to do.

J. C. Plumb presented a collection of apples, as noticed in the introduction, also, a specimen of syrup from the Sorghum, made from juice expressed after, and while the stalks were frozen. It had a pleasant, mild flavor, and none of the unripe, burnt taste, its usual characteristic.

A vote of thanks having been passed for the use of the Hall, the Association adjourned, *sine die*.

O. S. WILLEY, *Rec. Sec.*

SUGGESTIONS TO WISCONSIN FRUIT GROWERS.

BY PROF. J. P. KIRTLAND, M. D., CLEVELAND MEDICAL COLLEGE.

Pallas, in his Travels through the southern provinces of Russia, in the years 1793 and 1794, informs his readers that in Moscow, "in summer the most delicious species of cherries, apricots, peaches, pears and apples, nay, even ananas (*pine-apples*) are commonly sold at a reasonable price." He further adds that "Horticulture has within these few years been brought to such perfection, that all kinds of vegetables are in superabundance—all these improvements are chiefly the effects of indefatigable exertion."

Three important and interesting facts are furnished in these remarks :.

First. That such delicious fruits can be produced at all, so far north as the 55th or 56 parallel of latitude.

Second. That they can be produced in superabundance, and purchased at a reasonable price.

Third. That this has been accomplished by indefatigable exertion.

A few years since, while investigating the Natural History of your State, due attention was paid to its capabilities for fruit-producing. Its soil and geological formations are favorable for a luxuriant growth of wood, with most kinds of fruit-trees, yet the severity and vicissitudes of its climate too frequently counteract this advantage.

The location of your State, in relation to Lake Michigan, is unfortunate, so far as fruit-growing is concerned. The mitigating influences of that deep and extensive body of water are distributed extensively over portions of Michigan and Indiana by the prevalent western and northern winds, while the State

of Wisconsin receives the full impression of the sub-arctic blasts, sweeping down from the Rocky Mountains and the plains of Nebraska.

This view may discourage the indolent, but on the energetic and persevering it should produce a different effect. An object gained by exertion is enhanced in value. Cobbett says: "In England, where water-melons are raised only under glass, and with great pains, the fruit is transported to market wrapped, like a delicate infant, in a napkin; while in the United States, where they are grown with little care, they are tipped by cart-loads upon the sidewalks like potatoes. A peach raised under the frowning skies of Moscow would command more value than fifty specimens from the sunny South. The above cited facts from Pallas should afford both instruction and stimulus to increased effort to fruit-growers in this country, who are now contending with several impediments to their pursuits.

If the inhospitable climate of Moscow, and especially if the *stolidity* of the Russians, as they were in the last century, could then be overcome by indefatigable industry, so far as to produce such results, may we not confidently anticipate that the active and intelligent population of your State, commanding the improvements of modern arts and sciences, will successfully triumph over the comparatively trivial contingency arising from your climate?

The same amount of indefatigable exertion, judicously directed, would enable each of you to literally sit under his own vine and fig tree.

This desirable end may be attained by

1st. Furnishing artificial protection to vines and fruit trees;

2d. Selecting for cultivation the most hardy kinds; and

3d. Producing new varieties adapted to the soil and climate.

1*st. Artificial Protection.*

Under this head may be arranged all structures such as hot and green houses, and conservatories, down to hot-beds, cold-frames, walls, matting, and other expedients.

The costly, elegant, and extensive structures, such as the hot-houses of the Duke of Devonshire and the Russian Nobility, are beyond the means and aspirations of a citizen of Wisconsin; yet he may avail himself of means sufficient to adorn his premises, enhance their value, and at the same time place him in a position to surmount the impediments to producing most or all of our delicious fruits.

Let us investigate the details of this project.

The homestead of the farmer, and the suburban residence of the merchant, mechanic and professional man must be fenced, by some means, into yards, into garden, lawns and lanes, and furnished also with a variety of out-buildings.

For these purposes, wood is too frequently employed. It is perishable, and in many places costly. Brick and stone are also costly, and often not attainable. Hedges, for fences, are not generally reliable. Lime and gravel are to be found in every part of your State, and they are the essential ingredients in concrete structures for either fences or buildings, after Fowler's plan. Brick-bats and fragments of stone are also valuable aid for this purpose, where cheap and abundant.

It remains to be decided whether it be preferable to erect continuous walls, as recommended by Fowler, or first mould the concrete into fluted blocks, and when dry, lay them up, like bricks, with thin mortar. For a neat wall for buildings, a cheap method is to carry up the outside with the width of a brick, and at the same time to face up the inside with a structure of cement, occasionally connecting the two with headers of brick, or fragments of roofing slates.

Concrete walls can be completed by ordinary hands, saving thereby the expense of costly mechanics, and especially master workmen. Any individual who can square a building, is competent to superintend the whole operation.

The day is at hand when, from necessity, some more desirable and cheap material must be used for these purposes in preference to wood.

Suppose a residence, with a few surrounding acres of land,

to be thus fenced and provided with out-buildings, and even a dwelling house of these materials. Every judicious person would pronounce such place to be in comfortable and convenient order for the pursuits of domestic life. The cost of these improvements, the original value included, would fall much below its present value ; besides, it is now fitted for the commencement of a successful and superior method of fruit-raising, and is fortified against most kinds of depradators, man included—the latter no insignificant item at this day.

The walls of such buildings, as well as the extensive ranges of fence, would furnish exposures to every point of the compass. The study of their adaptation to various purposes, would engage the attention of their ingenious proprietor.

Bee-cultivation, under the improvements of Mr. Langstroth, is becoming successful, and is a kind of auxiliary to fruit growing. His bee colonies would be located in a safe and protected situation. His asparagus bed, vegetable garden, minor fruits, such as the currant, gooseberry, raspberry, berberry and blackberry, would each be placed in its appropriate position. Some trees, shrubs, and herbaceous plants will prove hardy on a northern exposure, protected from the sun; others, again, require the warmest and most sunny locations. An apricot tree, placed near the northwestern corner of a dwelling house, in a frosty region was known to perfect full crops for many years in succession, while all other trees of that kind in the vicinity, failed.

Both vines and fruit trees, trained as espaliers, against these walls, might be laid upon the ground, receive the requisite protection from earth, leaves, boards, &c., at the approach of winter, and, on the return of spring, might be restored to their former positions. If the occurrence of frost be apprehended during the latter season, they might be temporarily protected by mats, sheeting, or screens. Cheap, effective, and durable screens can be formed by framing together styles, after the model of door frames, and nailing upon them plates of zinc. A coat of boiling hot gas tar renders them imperishable.

Wall fruits generally attain a high state of perfection.—Many kinds will ripen when thus reared, which would fail on standards in open air. By these means the tender fig can be produced in your state and in Ohio. Espalier trees are under the eye and control of the cultivator, and their fruits are less liable to attacks from the Curculio, Codling Moth, &c.

Under-drainage and the formation of deep and artificial soils should form a part of this system of operations.

Your intelligent people having reached this stage of advancement, would hardly remain passive. Urged on by accumulated experience, enlarged views and refined taste, they would attempt new and improved modes of cultivation.

The next step would be to convert more or less of those walls into glass inclosures, such as grape, peach and cherry houses, and also into hot and green houses, and forcing establishments.

Even these can be cheaply and economically built. In these days of buzz saws and planing machines, lumber for all purposes, and of all forms, can be obtained at cheap rates; rafters and sash can be procured, the glazing, painting and putting together, can be done by common hands.

If artificial heat be required, tanks and troughs can be formed with concrete and water cement lime, and a circulation of hot water be established from a small cast iron-boiler, not larger, nor necessarily more costly than a tea kettle. At present it might be difficult to obtain such an implement, but it can be readily cast at any furnace where hollow iron ware is manufactured.

Most of the peaches and fine cherries raised in Great Britain are either wall fruits or grown under glass. In the United States, the increase of destructive insects and diseases, and the occurrence of severe winters, and extremes of wet and droughts in summer, are rendering the prospects of fruit-growers precarious, even in the most favorable localities. This plan, or some other, must be soon adopted as a remedy. People will hardly relinquish the use of fine fruits until they have exhausted every expedient.

2d. *Selecting Hardy Varieties.*

Experience and observation have already designated the kinds adapted to your soil and climate, and rejected others. Many which have hitherto proved tender or half hardy, will no doubt succeed, if managed upon this protective system.

3d. *Producing New Varieties.*

Fruits can be bred to any given point with as much certainty as animals. The theory of the process is perhaps better understood than the practice, yet the latter has been successfully attempted by Knight & Van Mons.

Mr. Knight furnished the public some five or six new cherries, including those produced by his daughter, and some new apples. The former take a high rank among our fruits—the latter are indifferent, at least in the United States. He operated on individual blossoms, by cross-fertilization.

Mr. Van Mons produced a much larger number of new kinds, but his attention was directed mostly to the pear. Of these a small portion only are of value in this country. He produced on the principal that improvements in qualities of fruit would develope, progressively, through a number of generations. It is possible that his results were, in reality, dependent on cross-fertilization, connected with an influence always operating with cultivated fruits, from breaking the natural habits of vegetation.

You will pardon me for alluding to myself in connection with this subject, but it may afford some instruction to young beginners in such undertakings, to know what others have done.

My attention was first awakened to the subject of producing new varieties of the cherry, by visiting for the first time in my life, an extensive orchard embracing all of the best varieties of that fruit known at that period—the 4th of July, 1812.

The query was at once suggested to my mind, how were so many fine varieties produced? They were too numerous to admit of the belief that they were the accidental sports of nature. Some system, some set of principles must have governed their

production. Such was my conclusion. To discover and to apply those principles successfully, have engaged much of my time and labor from that period to the present. Some of the results are twenty-three or twenty-four new varieties of the cherry figured in outline, and correctly described, in Mr. Elliott's work on Fruits. Besides these, I have several other kinds which are of equal value, but which I have not yet deemed expedient to introduce to notice. The former twenty-three or twenty-four varieties, were bestowed gratuitously on the public. Of them, perhaps two only would stand your climate—the Shannon and Kirtland's Morrello. Both were crosses from a Black Morello and an Arch Duke, and the prominent features of the two parents are evident in both of the progeny, though Mr. Lindsley informs his readers that the parents will not cross. These two seedlings would furnish fine parent stocks to breed with Early Richmond, Kentish, or other hardy kinds, in your localities. All of my seedlings would flourish in Wisconsin if propagated on Mahaleb stocks, and trained to walls as above suggested. My plan is to fecundate and cross all the blossoms on a large tree—hence there is hardly a limit to the number of good seedlings.

I will briefly add, that for ordinary purposes in producing seedlings, it is well to select for the parent female, a variety of the finest qualities whose seeds are always prolific, then surround this tree with other trees of the same species, but of varieties abounding in positive qualities, such as we wish to combine in the progeny to be produced. The greater number, and the more varied are the male stocks, the greater the probability of a favorable result. The seedlings thus produced will exhibit qualities of all degrees between the two parents.

In testing them I usually select from the yearlings those of large but stubbed growth of wood, large leaves and full buds—those of inferior promise are rejected.

Great aid in this process of crossing is rendered by various species of insects, who convey and mix the pollen upon the stigmas. Bees, especially, are faithful and profitable collaborators with the cultivator.

NOTES ON PEARS.

BY DR. McVICKAR, OF MILWAUKEE.

MADELINE—A standard on Pear stock, planted in 1848, has never blossomed, but I have eaten the fruit from other sources and found it wanting in sweetness and flavor. Consider its chief merit to be its earliness. Tree a strong grower, but has not proved hardy with me.

DEARBORN'S SEEDLING—Have it on Pear stock, 10 years planted in strong calcareous clay, underdrained. It has borne regularly and abundantly for a number of years past. Fruit always fair, and ripens gradually without rotting at the core. Quality always very good. I have met with no better in its season, and can find no fault with it except its small size.—Fruit to be picked while still green, and ripened in the house. By picking the crop at different times we have it in eating for three or four weeks from 1st of September. Free, hardy and good grower.

BARTLETT.—Of a number of trees of this variety with me on the Quince, all were more or less injured, and some killed by the hard winter of 1855-56, and I should rank it as a tender tree. Fruit always large handsome and profitable, though not quite so high in quality as beauty.

WHITE DOYENNE.—This variety from 1847 until the winter of 1855–56, seemed as hardy as one of our forest trees, and I so spoke of it in my report to you about that time. But that winter was too severe for it, and fine large Pyramids on Quince well furnished with fruit spurs throughout the whole tree, had them entirely killed, and many branches injured a foot or two at their extremities. In the underdrained borders none of the trees were killed, but in the undrained ground they were de-

stroyed. Still I consider this as one of my hardier varieties. With regard to the black blotches or canker which form on the fruit, and also its cracking, I would remark that a large and vigorous Pyramid on Quince, planted in 1848, first showed these defects in 1857, and the crop of 1858, has been still more affected. Another large Pyramid on Quince, planted in 1853, in the same border with the first, and about ten feet from it, has had a few pears affected with the canker, this year, for the first time, but no cracking. Another strong Dwarf on Quince planted in 1857, near the above, had every specimen of this year's crop, perfectly fair and healthy. The borders in which these trees are planted, have a clay subsoil, underdrained, say two and a half feet, and all the trees had the same treatment.—From these facts I conclude that tree No. 1 has sent its roots down into the cold and wet clay too deep to be relieved by the underdrains, and from thence forms an imperfectly elaborated sap, which produces a diseased action in the fruit, resulting in canker. Tree No. 2 seems to be slightly affected by the same cause; and tree No. 3, whose roots have probably not yet penetrated beyond the compost in which it was planted, still produces perfectly fair and healthy fruit. If I am correct in these opinions, the conclusion to be drawn is that, in order to provide for the permanent health of your trees and their fruit, the borders should be deeply underdrained (where there is a clay subsoil,) say three and a half or four feet, the soil having been well trenched two spits, with the addition of suitable composts previous to the planting out of your trees. And I have no doubt that a few trees planted in ground thus prepared will give more satisfaction, as well as profit, than a much larger number set out in the usual careless way.

Belle Lucrative.—This is a prolific variety of great excellence. About the size of the W. Doyenne; as sweet and fine in grain, and higher in flavor, it is free from all tendency to canker, which affects the latter.

With me this fruit has never acquired the high color and beauty of which some cultivators speak, but its good qualities

compensate for that. In eating about 15th Oct. My trees on Quince are moderate growers and hardy.

Marie Louise.—Beautiful in appearance, and, to my taste, unsurpassed in flavor and quality, it is considered by high authorities, as hardy and productive; but I greatly regret that it has not proved so with me, though I must confess my trees were not underdrained, which may have occasioned their loss in 1855-'56, though the Urbaniste, Beurre d' Amalis, and Bezi de Lamotte, standing alongside of them, escaped. With me it grew well on Quince, though Rivers says it does not. Tree, rampant and twisting in its growth; ripe about Oct. 15th.

Duchess d' Angouleme.—On the Quince this magnificent Pear is the pride of the amateur, both in size and flavor, wherever it is hardy enough to stand the climate, and has a sufficiently rich and sandy loam well drained, to bring out all its good qualities. But the same cannot be said of it on the pear stock, or in cold or wet soils. With me a handsome Pyramid, planted in 1848, in a drained border, which, in 1855, bore over eight dozen, large and fine fruit, was, by the severity of that winter, so injured in its fruit spurs, that it has not yet recovered from the loss. Some of the branches were also killed for a foot or two at their extremities, which required very severe pruning to bring it again into shape. It is now, however, again growing vigorously, and was covered with blossoms last spring, but the crop for this season was nearly cut off by the cold rains when in blossom. It bears early and comes in eating in November, succeeding the White Doyenne, of which it is a worthy successor.

EXPERIENCE WITH FRUIT IN WISCONSIN.

BY WILLIAM SOPER, OF WAUKESHA.

WAUKESHA, January, 1859.

A. G. HANFORD, ESQ.,

DEAR SIR:—In compliance with your request, I herewith enclose a brief and somewhat hasty sketch of my experience with fruit in Wisconsin.

PEARS.

Oswego Beurre.—I esteem this, one of the most valuable Pears; it has succeeded well with me, both on Pear and Quince. Very hardy, bears early, constantly, and is heavy bearer. Fruit medium, melting, juicy, with a slightly vinous flavor; not *first rate*, but when well ripened excelled by few. Sufficiently rich and sweet to be considered an excellent Pear.

Onondaga, or Swan's Orange.—This excellent Pear has succeeded well with me on Pear stock, but not on the Quince. It is a vigorous grower, and comes to bearing early, and is a heavy bearer. The fruit is large and beautiful, melting, juicy, rich and high flavored, and when properly ripened, will rank among those of first quality. Its size, hardiness of the tree, and bearing quality will always render it one of the most desirable for culture.

Madeleine.—This Pear has not been the most hardy with me; it makes a good growth on Quince, but does not unite well with that wood, and is liable to be broken off by high winds and other accidents. On Pear stock it has succeeded better, and has come early to fruiting. Fruit medium in size, very juicy, melting, and of good flavor. I consider it one of the best very early Pears.

Stephen's Genesee.—I have fruited this on Quince stock, yet it has not proven very hardy. Fruit large, beautiful, sweet, and of good flavor.

Beurre Diel.—I have cultivated this on Quince stock only. It has proven hardy with me, and an abundant bearer of large, rich and sweet fruit, somewhat coarse, but well deserves culture.

Glout Morceau.—This has proven with me the most hardy of all Pears on Quince, with a vigorous, strong growth; it has fruited but once with me, is of a large size, good and sweet; but has not yet equaled my expectations.

Buerre D'Aremberg.—I prefer this to the Glout Morceau, but it is not so hardy on Quince stock; fruit large, handsome, melting, juicy, with a good vinous flavor; it is ripened with but little care, and is a most excellent Pear.

Winter Nelis.—I have cultivated this only on Pear stock; it has proven hardy, and comes to bearing early. Fruit from medium to small, melting, juicy, sweet and rich. I esteem it the richest and most delicious of all Pears.

Beurre Easter.—I have cultivated this on Quince stock only; it has proven hardy, but of moderate growth; comes into bearing early; fruit large, fine-grained, buttery, melting and juicy. It requires great care to ripen properly, and is then first rate.

Chaumontel.—Has proved hardy on Quince; fruit good size. Although a good Pear, it has not come up to my expectations.

Louise Bonne de Jersey.—I have cultivated this on Quince stock, but it has not proven very hardy; it is, however, a good bearer, fruit large, buttery, melting, rich and fine, but not first-rate.

I am cultivating many other Pears which have not yet fruited.

CHERRIES.

I have been unsuccessful in cultivating the Heart and Bigarreau Cherries; but have succeeded with the Morrellos and some of the Dukes.

Belle Magnifique.—Is hardy and productive; fruit large, with a good, mild flavor. Good for cooking, and eating out of hand.

Belle de Choisy.—Has proved hardy with me, but as yet a spare bearer; fruit moderate size, beautiful, excellent, juicy, and nearly sweet.

English Morrello.—A very large tree, and profuse bearer, with a rich, acid flavor, slightly astringent, of good size, first rate for cooking, but rather acid to eat out of hand.

Plumbstone Morrello.—This has proven a hardy tree; fruit large, rich, and good for cooking. It has not proven a heavy bearer with me.

Reine Hortense.—Has proven a hardy tree of luxurious growth, shy bearer, but a large, rich, excellent cherry, of good and nearly sweet flavor.

BLACKBERRIES.

Newmans.—A new berry lately introduced; as yet but little known. It has fruited with me twice. It has a rich, sweet berry of good size; and is an abundant bearer. I think it will become popular when known.

Lawton.—Has not as yet fruited with me; they grow well, and are very promising.

APPLES.

Early Joe.—A fruit of great beauty, very delicate and delicious flavor. The finest dessert variety of its season; tree hardy, and promises to be productive.

Early Harvest.—Does well, and is indispensable in the smallest collection.

Early Strawberry.—Fine upright grower, hardy, rather tardy in coming into bearing; a pleasant, acid fruit.

Late Strawberry.—An excellent variety, deserving of extended culture, bears early, good grower, and very hardy.

I have in my garden a miniature orchard of Dwarf Apple Trees, comprising a choice selection, which have grown well, and are now full of promise.

Yours truly,

WILLIAM SOPER.

LIST OF APPLES FOR A WISCONSIN ORCHARD.

BY J C BRAYTON, OF AZTALAN, WIS.

DEAR SIR:—I hasten to comply with your request, "to furnish a list of apples for a Wisconsin orchard."

I will first give those which are hardy, worked at or near the surface on good seedling stocks, and which, in my opinion, are not improved in any respect by being top-worked. My list is especially for the richer soils of the Mississippi valley portion of Wisconsin, and not altogether applicable to the Lake Shore region:

Early Harvest, Early Red, Early Pennock, Fall Stripe, Sweet June, or *High top Sweet*. Am. Summer Pearmain, Benoni.

AUTUMN.

Fall Winesap, Fameuse, Fall Orange, Late Strawberry, *Red Streak*, Roseau, St. Lawrence, White Gilliflower, Sweet Pear, *Trenton Early*, Utter's Large, Bailey Sweet.

WINTER AND LONG KEEPERS.

Black Vandervere, probably *Newtown Spitzenburgh*, Eng. Golden Russet, Flushing Spitzenburgh, Limbertwig, Northern Spy, Perry Russet, Red Spitzenburgh, Rawle's Jennet, White Winter Pearmain, Tallman Sweet, Broadwell Sweet, Westfield Seeknofurther, Yellow Belleflower, Wagener, Winesap, Domine.

Varieties too tender for above list which are believed to be sufficiently hardy if top worked on hardy stocks.

Red June, Sops of Wine, Autumn Swaar, Golden Sweet, Herefordshire Pearmain, Lowell, English Russet, Maiden's Blush, Belmont, Fulton, Jonathan.

Local or uncertain names are *italicised*.

Truly yours,

J. C. BRAYTON.

LIST OF FRUITS FOR A FARM OF 80 TO 100 ACRES.

BY J. J. THOMAS, OF UNION SPRINGS, N. Y.

At the request of the President of the Association, Mr. Thomas has kindly furnished the following list of fruits for a farm of 80 or 100 acres, to afford a full family supply, and a proper succession, extending the circle of fruits throughout the year and adapted to our climate. Mr. Thomas' large experience, close observation and well known caution, will give great value to this list.

LIST OF FRUITS FOR A WESTERN FARM.

It is difficult to give a precise list, as in some seasons the crop will be ten times as great in some years as others ; and again some will bear abundantly and others fail in the same season. The following, however, will serve as an attempt or approximation.

EARLY SUMMER.

Early Scarlet, Wilson's Albany, and Hooker *Strawberries* two or three square rods well cultivated in drills.

EARLY AND MID SUMMER AND LATER.

Red and White Dutch *Currant*, Cherry, White Grape and May's Victoria, one or two dozen bushes each ; two dozen Houghton's *Gooseberry;* Fastolf and Franconia *Raspberries*, one dozen or more each, and three dozen Brinckle's Orange, all to be laid down in winter. Three trees, Mayduke *Cherry*, three of Early Richmond, one of Belle de Choisy, and four of Belle Maginfique. A dozen each of Dorchester and Rochelle *Blackberries*.

LATE SUMMER.

Red Astrachan, Sops of Wine, Carolina Red June, Sweet June, Early Joe, Benoni, *Apples*, each two trees. Tyson, Rostiezer, Osband and Brandywine *Pears*, each two trees. Some Currants and Blackberries will continue till this time.

AUTUMN.

Oldenburgh, Late Strawberry, Fall Orange, Dyer, Gabriel, Maiden's Blush, and St. Lawrence *Apples*, each three trees. Flemish Beauty, Buffum, Fulton, Onondaga, and Stevens' Genesee Pears, each two trees. The first two being very hardy, might be planted in greater number. If *dwarfs* are desired for coming soon into bearing, they may be of the following sorts, which are among the hardiest at the West, and which do well as dwarfs ;—Buffum, Osband's Summer, Oswego Buerre, Tyson, White Doyenne, and Glout Morcean, and Easter Beurre for winter, three to six each, more of the two last. The Delaware, Clinton and York Maderia *Grapes*, two to six vines each ; the Delaware is the most valuable.

WINTER AND SPRING.

Westfield Seek-no-further, Jonathan, *Fameuse*, Yellow Bellflower, Winesap, White Winter Pearmain, and Mother *Apples*, each five trees, except those in *italics*, of which there may be ten each.

Those living at the west who may be well acquainted with those fruits which do best there, may modify the list.

[We would add to the above the following: English Morrello *Cherry*. Washington, Smith's Orleans, Coe's Golden Drop, Lombard, Imperial Gage and Yellow Egg *Plums*—two trees each.—Ed.]

FRUITS—TENDER AND HARDY VARIETIES.

BY F. W. LAUDON, OF JANESVILLE.

DEAR SIR:—Thirteen years ago, I procured of one of the oldest nurserymen in the State about fifty varieties of apples which I set out in a stiff, clayey loam, in the "openings;" they have had the best care, and are now seventeen years old. Up to this time they have not borne fruit enough to pay the cost of the trees. I know not the cause of my failure; perhaps it is owing to the varieties not being adapted to the climate and soil. The trees have blossomed profusely for seven or eight years.

I have another orchard comprising 100 varieties, planted on the farm, in a clayey loam, with a clay sub soil, on a northern exposure. The trees have grown and blossomed well, but do not bear more than from one to a dozen fruits each. The varieties that bear well here, such as the Rambo, Golden Russet, German Bough and others, bear constantly. I have thought the difficulty might be that our soils were deficient in mineral salts or alkalies; lime, we know, changes the vegetable matter of the soil, and enables all useful compounds both organic and inorganic, to enter into the circulation of fruits; it neutralizes the acidity of soils.

It would occupy too much space to give the names of apples that prove hardy here. I give in the list below, the names of those that have proved tender. I have tested nearly all the varieties to be found in the West.

Tender varieties of the apple—Early Strawberry, Autumn Strawberry, Baldwin, Lady Apple, Northern Spy, Æsopus Spitzenberg, Vandervere, Norton's Melon, Cloth of Gold, Westfield Seek-no-further.

Trees on well drained soils have stood the extreme cold of past winters much the best.

I give below the lists of pears, which, with me, have endured or failed during the winters of 1856 and 1857.

HARDY PEARS.

Amire Johannet, Beau Present d' Artois, Bloodgood, Dearborn's Seedling, Doyenne' d'Ete, Osband's Summer, Rostiezer, Andrew's Beurre Bosc, B. d' Amalis, B. d' Anjou, B. Diel, B. Goubault, B. Waterloo, Golden Beurre of Bilboa, Bergamot Cadette, Belle Lucrative, Dix, Compte de Lanny, Doyenne Boussock, White Doyenne, Flemish Beauty, Marie Louise, Napoleon, Onondaga, Oswego Beurre, Seckel, Steven's Genesee, Van Mons Leon le Clere, Washington, Lawrence, Passe, Colmar, Winter Nelis, Brandywine, Howell Sheldon.

TENDER VARIETIES.

Bartlett, Beurre Geffart, Tyson Canandaigua, Madeleine, Buffam, D. d' Angouleme, Louise bonne de Jersey, Glout Morceau, St. Germain, Vicar of Wakefield, Catillac, Kirtland, Suzette de Barray, Easter Beurre.

CHERRIES.

All the Duke and Morello Cherries are hardy, but poor bearers. The Hart and Bigarreau sorts are tender.

PLUMS.

Of Plums, the following sorts have proved tender:

Cherry and Prince's Imperial Gage.

The following are hardy and good bearers:

Bleecker's Gage, Columbia, Coe's Golden Drop, Red Magnum Bonum, Prince's Yellow Gage, Green Gage, Lawrence Favorite, Smith's Orleans.

GRAPES.

The Clinton and New England varieties are hardy.

CURRANTS.

I have tried nearly every variety in cultivation, and find the White and Red Dutch equal to any other sorts. Victoria is valuable, for the reason that it is later than the above. The Cherry Currant is larger than the other varieties, but not so productive.

GOOSEBERRIES.

I have succeeded in fruiting the English sorts, by the use of a handful of salt on the ground about each bush. Houghton's Seedling is an excellent and productive variety, which never moulds.

RASPBERRIES.

All the finer sorts require protection here.

BLACKBERRIES.

Lawton's Seedling is an abundant bearer, and the fruit is of good size. The plants are tender, as are our native varieties.

STRAWBERRIES.

I have cultivated the Strawberry extensively for many years and have tried most sorts in cultivation.

The land for this crop, should be plowed as deep as possible, (never less than twelve inches) and should be free from the seeds of weeds. No manure should be used. The strawberry requires but little water in the spring, but a great deal during the fruiting season. I doubt the necessity of mixing staminate with pistillate sorts in order to obtain a good crop. I have known Hovey's Seedling bear a large crop, when to my certain knowledge, there was not another variety within forty rods. I have had the best success with the following sorts:

Willey, Genesee, Hooker, Jenny's Seedling, McAvoy's Superior, Jenny Lind, Iowa Large, Early Scarlet, Longworth's Prolific, Walker's Seedling, Wilson.

I have about twenty seedlings of my own; any of which are equal to any of the above.

ORCHARD PLANTING AND CULTURE,

WITH DESCRIPTIVE NOTES OF VARIOUS FRUITS.

BY JOHN TINKER. M. D., OF CLINTON, WISCONSIN.

My experience has been, that good fruits can, and will be raised in Wisconsin in sufficient quantities to supply our own people, at least. True, many of the first attempts to grow orchards here, proved failures, and will again under like circumstances. It is not reasonable to presume that the same varieties, and the same modes of cultivation, that succeed on Long Island, should succeed here, where all external nature is different.

In setting out an orchard, the first thing to be considered, is a suitable location, which beyond all dispute, is the highest and dryest ground the farm affords. I am well aware that in taking this side of the question, I shall frighten a certain class of people, who have been in the habit of setting trees in sloughs and mud holes, at the bottom of ravines, for the sake of shelter and protection. Such low places are colder in winter and warmer in summer, and more subject to sudden changes, generally, than higher ground. But what is worse than all, the sub-soil of low places is necessarily wet, unless thoroughly underdrained.—The same tree will withstand 20 degrees more of cold when its roots are in dry soil, than when in wet. Elevated rolling lands and bluffs will underdrain themselves, and, besides, trees, like animate nature, have a physiological system which requires about the same conditions of air, light, heat and electricity. Yes, set your trees up in the world! Give them a chance to battle with the elements of nature, and gain strength and stamina thereby. Also a northern slope has less sudden changes than a southern one. A southern slope is best for small fruits, provided you cover tender vines up in the winter.

Set trees 20 feet both ways. They will protect each other from driving winds better than any arrangement of forest trees around the orchard. Let the tops grow as low as they will—within a foot or two of the ground, and as fast as the trees grow give up the ground to their exclusive use. It is a mistaken idea that we can raise a full crop of grain in an orchard without hurting it. Many people plow up the fine roots of trees without knowing it. They should be very careful and let the plow run shallow near the trees.

Set good three year old trees. In fact, the younger the better, provided the cultivator will see that no weeds, grain or tall corn shades or chokes them.

Allow me to say a few words about root-grafting. People make a sort of a scape-goat of it, upon which they pile all the faults of careless cultivators, wet soils, cold climates, and tender varieties. The truth is, graft a good, hardy variety at the surface of the ground, upon a whole vigorous root, and set it in a high, dry location, and you will get some fruit as well as from top-grafting.

The varieties that have succeeded best with me upon high, dry and open prairie, are the following:

APPLES.

Yellow Harvest—Good, tree hardy, does not bear young. (Not the German Bough which is frequently sold for it,)

Sweet June—Good, ripe first half September. Tree as hardy as a burr oak, and bears young.

Hawley—Good, large, Sept. Tree very hardy, and an annual bearer.

Red and Yellow Siberian Crab Apples—Sure every time, good for tarts and jellies.

Fall Winesap—Good; Nov. to Jan. Tree pretty hardy, rapid grower, bears young and profusely.

Tallman Sweet—Best, Dec. to March. Tree hardy, vigorous grower, bears sparingly while young.

Golden Russet—Best, Jan. to April. Tree very hardy, rapid grower, bears sparingly while young.

Small Red Romanite—Good, Feb. to May. Tree hardy, good grower, fruits well.

Rawle's Jannette—Best, keeps twelve months. Tree not as hardy as would be desirable in this climate, bears young and abundantly, has too many good qualities to be rejected.

There are other good kinds I presume, which I have not tested.

I am experimenting with two seedlings that originated in Clinton, and expect to make something of them.

PEARS.

Flemish Beauty—Best, Sept. Tree quite hardy, more so than most apples, good grower. Must succeed.

Winter Nelis—Good, winter. Tree hardy, not equal to the above.

Stevens Genesee, Bartlett, Onondaga, Bezi De La Motte, Bell's Long Green of Autumn—Will succeed under favorable circumstances.

CHERRIES

Are not worth talking much about, unless it be a few of the Morellos and Dukes.

PEACHES

Can be raised by covering the lower limbs in winter.

PLUMS

Have not succeeded very well with me, but other people appear to get some.

Smith's Orleans—Is most hardy.

Cannot some one procure a cross between the native plum and some good variety, that would possess hardiness and fair quality?

CURRANTS, GOOSEBERRIES, RASPBERRIES, PIE PLANT, &c.,

Should be set 4 or 5 feet both ways, so as to cultivate with horse and cultivator, and thereby save a deal of hard hoeing by hand, which, perhaps, they would never get, if it had to be done by hand.

You can raise a bushel of the above fruits, except the raspberries, after the bushes are once set, as easily as a bushel of potatoes.

Set red and white currants with some of the new varieties, Houghton seedling gooseberries, and improved varieties of pie plant.

STRAWBERRIES

Will grow anywhere and everywhere, if you keep the weeds down.

Set early in the spring four feet both ways, and cultivate the first summer, same as potatoes. Cover up in the fall with manure, and cultivate it into the ground in spring. It won't hurt the vines a bit.

GRAPES

Can be raised in Wisconsin. Plant on a light, dry, rich, warm soil, and cover the vines in the winter. Do not prune too much, either of the vine or anything else.

All of this small fruit will bear any amount of manure, and clean cultivation.

RAISING AND PLANTING OF EVERGREENS.

BY SAMUEL EDWARDS, OF LA MOILLE, ILLS.

La Moille, Ills., Dec. 31, 1858.

Dear Sir :—In fulfillment of my promise, I offer a few items of my experience in growing Evergreen trees.

From several carefully conducted experiments in growing from the seed, I am led to doubt the economy of thus obtaining plants, except of the Red Cedar, which is at home, in our generally dry climate.

Yet it is my present purpose to "try again," a general assortment of seeds the coming season. Red Cedar berries should be bruised early in March, and mixed with an equal or greater bulk of wet, wood ashes. In three weeks the alkali will have "cut" the resinous gum, when the seeds can be washed clean from the pulp. In preparing the seed beds, dig the ground a foot or more in depth, mix for three or four inches at the surface a liberal dressing of well-rotted leaf-mould, or wood soil, and sharp sand.

Lay off the beds four feet wide, legthwise, east and west; sow the seeds in rows a foot apart, running across the bed. This gives room for deep culture which is essential. Along the south side of the bed, drive stout stakes one and a half feet above the surface, also another row on the north side, two and a half feet high. Rails are nailed on the tops of the stakes, across which, freshly cut brush with foliage on, is placed, before very hot weather, to screen from the scorching rays of the sun—also, a wide board is laid along the the south side of the short stakes, to keep out the sun and drying winds. If there is a prospect of drouth, water occasionally, in the evening. In October, the shading may be removed, and a mulching of two inches of leaves put along the rows.

Cultivate in seed-bed the second year; unless the season is very dry, they will need no shading if the ground is worked deeply. They are transplanted to nursery rows two feet apart the second spring, shortening the tap root at the time. Give them plenty of room in the row to develop the lower branches.

In taking up plants for sale the two succeeding seasons, it is best to thin them in the rows by removing each alternate plant. When three years in nursery, remove each alternate row and root-prune the ones left, with Harkness' Tree Digger, (an invaluable implement for Nurserymen.)

For ordinary screens of moderate height, I prefer the Red Cedar to any other Evergreen, for our soil and climate.

Foreign varieties of Evergreens, I prefer to import at two years from the seed, and procure native varieties from the forests of Michigan and New York. Care is exercised in selecting them from open exposures, as they are much better supplied with roots than when grown in the shade. The roots must not be allowed to dry in the least, whilst out of the ground. Pack the roots in damp moss, keep the tops dry. It is a good plan to make holes in the boxes so as to ventilate the tops.

Plant and shade in beds similar to those reccommended for growing Red Cedar from seed. Transplant to nursery rows the following spring. The Pine and Juniper families are admirably adapted to dry soils; Spruces and Arbor Vitæ to moist ones.

For a screen to orchards, buildings and stock-yards, I prefer the Norway Spruce.

In preparing the ground for planting, always plow deep; large trees are less checked in their growth if removed in winter, with a ball of frozen earth; though with care in securing all the roots, have had ten foot trees succeed finely in April, without any dirt adhering to roots. From the time of breaking up in winter until buds are expanded, it is a safe time to remove Evergreens, but I prefer to do it early, as when buds are much swollen they are very easily broken off, and the symetry of the tree injured. I have also had good success when

transplanted in latter part of August or early in September—if a dry time, *always* wet the ground thoroughly at time of planting—*never fail* to cultivate the ground well, one or two feet further than the branches extend, and mulch well with chip dirt, sawdust, straw or hay, (never use rank stable manure) in June, before very hot weather.

A liberal dressing of chip dirt, and a little leached ashes, applied in winter or early spring is very beneficial.

My commencement in planting Evergreens on the prairies, with a few specimens, was made in 1845; have now some eight or ten hundred, planted for screens, from which we already derive some shelter, and their beauty is above all price, where without them, winter is so dreary.

Annexed, is a list of varieties tested.

Very truly, yours,
SAMUEL EDWARDS.

List of Evergreens exhibited for First Premium, at Illinois State Fair, September 1858, *by Samuel Edwards, La Moille Nursery, Bureau County, Illinois.*

1. White Pine, or.....*Pinus Strobus.*
2. Austrian, or.. .....*Pinus Austriaca.*
3. Cembran, or ....*Pinus Cembra.*
4. Lofty, or.....*Pinus excelsa.*
5. Gray, or .....*Pinus Banksiana.*
6. Scotch, or.....*Pinus Sylvestris.*
7. Sea, or.....*Pinus maritimus.*
8. Norway, or.....*Pinus resinosa.*
9. Norway Spruce,.....*Abies excelsa.*
10. Black Spruce, or.....*Abies nigra.*
11. Red Spruce, or..... ..*Abies rubra.*
12. White Spruce,.....*Abies alba.*
13. Hemlock,.....*Abies Canadensis.*
14. American Arbor Vitæ, or.....*Thuja occidentalis.*
15. Siberian Arbor Vitæ, or.....*Thuja Siberiana.*
16. Red Cedar, or.....*Juniperus Virginica.*
17. Savin, or.....*Juniperus Saberiana.*
18. Swedish Juniper, or... .....*Juniperus Suecica.*
19. Irish Juniper, or..... .....*Juniperus Hibernica.*
20. Trailing Hemlock, or..... .....*Taxus Canadensis.*
21. Balsam Fir, or..... .....*Picea balsamea.*
22. European Silver Fir, or.....*Picea pectinata.*

The Lofty Pine, Sea Pine, and European Silver Fir, are not sufficiently hardy to be desirable here, unless protected in winter.

I have also tried and rejected as not hardy—Cedar of Lebanon, Deodar Cedar, Mount Atlas Cedar, Douglas Spruce, Menzie's Spruce, Arancairan Pine, English Yew, Irish Yew, Chinese Arbor Vitæ, Golden Leaved Yew, Dwarf Box, and three varities of Tree Box.

TRANSPLANTING EVERGREENS.

BY A. G. HANFORD, WAUKESHA.

Nursery-grown evergreens, if carefully handled, may be moved as safely as the most hardy deciduous trees. We prefer early spring, from the first breaking up of the winter, until the buds open ; perhaps the best time is just as the buds are swelling. Some successful planters recommend rather later—after growth has fully commenced, extending the time until the first of June.

Last spring we moved 3000, from one to three feet high, after many had made a growth of one or two inches, and notwithstanding the severe drouth of the following summer, we lost less than a dozen plants. The distance, however, was not great, and they had been moved twice before, hence were well furnished with fibrous roots. We know of successful planting late in summer, after growth had ceased.

Removals from the forests are always attended with risk. To insure reasonable success, choose small plants from open situations, observe the utmost care in their removal, keep the roots moist, and do not expose to *sun* or *air*. During the past ten or fifteen years, many hundreds of evergreens have been

brought to this place from the forests and marshes of the north. They have sold cheap, or, rather at a low price. Very few, however, lived, and now scarce a dozen are to be found. A gentleman procured several hundred such, three years ago, for his own planting, employed a professional gardener to set them out, and not more than one in fifty were alive in the autumn. At the same time he procured, from a neighboring nursery, some firs and spruces, of a large size, all of which lived and made a fine growth.

Evergreens will *live* in sod ground, but to *grow* and thrive, they should receive good cultivation. Annual dressings of old manure, forked in about the roots, and frequent stirring of the soil, will double their growth. No tree will more gratefully repay this care.

BY D. MATHEWS, OF BURLINGTON, WISCONSIN.

With a little care, evergreens may be transplanted with as much certainty of success as apple trees, but the roots must not be long exposed to the air, and particularly to the sun. When I get evergreens at the nurseries, I wrap the roots in a square piece of coarse sheeting, with all the adhering dirt. I recollect of getting a lot some years ago, of Mr. Phœnix, at Delavan, and served them in this way. Before I reached home, the ball of dirt surrounding the roots was frozen solid. They were set out in this condition, and all lived and grew well the first season, and still live.

SEEDLING APPLES, AND OTHER FRUITS.

BY COL. G. DE NEVEU.

FOND DU LAC, December 20th, 1858.

DEAR SIR:—Among *seedling apples* I have three or four, which I believe deserve description. One is a nameless apple, which your Committee at the State Fair thought the best of my seedlings for taste. *Description:* Rather large, or large medium, specimens very uneven, reddish streaks, ribbed, oblong, somewhat pointed towards apex, rather high pleasant flavor; tree diverging, branches somewhat straggling, bark dark, leaves rather large; vigorous, hardy, not very strong bearer, but bears every year. In eating, from September to November.

Temptation.—A very fair, large, roundish green apple, with a beautiful deep red cheek towards the sun. Bears heavily every other year, but bears some every season. Not very superior in taste, but good; keeps until March or April. Sometimes, or often, an abortive apple is attached to the main one, near the stem. Tree erect, gracefully and very evenly diverging branches in every direction; a splendid head; probably the handsomest tree I have left. Habits hardy and vigorous, leaves large, deep green, downy underside. I deem it on all accounts perhaps the best of my apple trees, and it is undoubtedly worthy of cultivation.

Mammoth Crab.—Obtained from seed of Siberian Crab brought from Batavia, N. Y., from garden of the late David E. Evans, in the spring of 1839. Has all the appearance in bark and straggling growth of the Siberian Crab; fruit also resembles it, but four times larger. Much enquired for here, for preserving purposes. Worthy of propagation in my estimation.

Juliet.—Fall or early winter, medium size, light yellow

ground, red cheek, very handsome, tender, juicy, good or very good flavor. Tree of rather slender growth, tip end of limbs sometimes perish in winter, which makes me think it as somewhat tender; *otherwise* worthy of cultivation. For flavor we think this equal to any of the grafted kinds. Sells very readily; bears, rather overbears every second year.

In Pears I have nothing to offer, except that of the six or seven kinds I grow, the Stephen's Genesee and Oswego Beurre seem to be the hardiest and strongest bearers. They are both on quince stocks.

Of cherries I have grown the following, viz: May Duke, Black-heart, Black Tartarian, May Bigarreau, Napoleon Bigarreau, Yellow Spanish, Black Eagle, Early Purple. The first named is the only survivor; it grows vigorously and bears full, when late frosts do not destroy the blossoms.

I suggest that it would be worth trying to raise the various kinds of grape vines native to Wisconsin; some might be valuable. They would certainly be *hardy*, a most important consideration.

I never raised but three peaches, and dispair of succeeding with it in open culture. Trees freeze down to the ground, and start again from the roots to be cut down again in the same way a year or two afterwards.

Plums promise well here; sometimes bear fuller than I ever saw them in France. Curculio is however a terrible enemy with us. Best mode of fighting them after all is, I think, to raise so many trees that they cannot spoil all the fruit. *Mirabelle*, (obtained directly from France), is a nice little plum for preserves; bears well, seems to resist the winter. Purple Gage more tender. Washington does tolerably well; Prune D'Agen, rather tender, but valuable; Imperial Gage excellent—great bearer; but the best sort in my opinion for hardy habits and profuse bearing is the Lombard. St. Catherine, (obtained from Patent Office), and McLaughlin, (from D. A. Fairbanks, Augusta, Maine), not fully tested as yet, promise well, but McLaughlin seems a slow grower.

THE SEEDLING APPLES,

Exhibited at the Annual Fair of the Wisconsin State Agricultural Society, October, 1858.

BY L. T. PENNINGTON.

The exhibition of Seedling Apples at the Wisconsin State Fair, held in October, 1858, was highly creditable to the State and to the individuals producing them. Some of these it is hoped, after further trial, may be found worthy of a place among those of established merit.

I would not at this time, discuss the question of the duration or existence of those varieties, which some claim, as fast going into decay, but call attention of cultivators to the importance of building up, in every distinctly marked locality, a pomology of their own. The laws of adaptation are as certain with regard to our trees, as they are to our animals, and only by a wise selection and a judicious propagation, can we arrive at results lasting and profitable.

It is a fact too apparent to every one conversant with the pomology of the North-Western States, that a great number of those varieties now under cultivation, must sooner or later give place to seedlings, better adapted to the soil and climate, or to a foreign importation; which before they can be trusted should be tested by a number of years of careful observation and experience.

Among our list of cultivated apples, and the same may apply to our seedlings, there are many which, for a time, give much promise, but which, on more mature examination, and on further trial, are found deficient, not only in what constitutes a healthy and hardy tree, but also in the more important qualities of the fruit.

Whether these imperfections, found in many of our apples,

which have heretofore been highly esteemed, are of but temporary continuance, owing to some unfavorable changes in our climate and soil, or to the want of adaptation in our climate and soil, or to a sure and inevitable decay in the variety cultivated, a knowledge of which is reserved for a more extended experience, it is difficult to determine.

Those of us who engaged in Horticulture in the West at an early day, still feel that our knowledge is yet too imperfect to decide on questions which a longer time and much observation can alone determine.

As a proof of the position of adaptation, I would refer to the Baldwin, of New England, to the Newtown Pippin of New York, or to the Rawle's Janet, of Southern Illinois. Every person that shall continue to plant, in Wisconsin and Northern Illinois, these and others of like character, will, I fear, suffer sore disappointment, and, in the end, will exclaim, that this is not a fruit country.

Our appeal, then, is to every friend of Horticulture. It is a work, in which not only individuals, but States should heartily engage. The production of an apple, adapted to Wisconsin, of equal value to that of the Baldwin to New England, should be encouraged, and receive the highest award made by your State Society. Five hundred dollars, with a gold medal would be worthy, and should be offered by the State of Wisconsin, for the production of a fruit of such excellence.

For the Committee.

L. S. PENNINGTON.

P. S. What I mean with regard to the Rawle's Janet is, that it does not attain to that excellence found in or near its native locality, Southern Illinois or Northern Kentucky. The tree is, here, but partially hardy.

L. S. P.

REMARKS ON WINTER PEARS.

BY P. BARRY, OF ROCHESTER, N. Y.

The supposed difficulties of keeping and marketing winter pears, deter many from embarking extensively in their cultivation. But these difficulties are neither so numerous nor so formidable as they appear to be.

Besides, just as soon as winter pears become an article of commerce, or so plentiful that fruiterers in large cities can secure any considerable quantity, they will prepare places for storing and ripening them, and the grower will be able to market his fruits the moment they are taken from the trees; indeed, that can be done now, but who has winter pears for sale?

Before offering any suggestions of a practical nature on this subject, I wish to say that winter Pears are neither worth gathering or storing unless they be *well grown*. Small and imperfect specimens of summer and autumn varieties may, and in many cases, do ripen off to a tolerable degree of perfection, but not so with winter sorts generally. By good cultivation, a judicious thinning on the tree, &c., &c., fine, full grown, and fully matured specimens must be produced, and then there will be but little difficulty experienced in ripening them.

I have seen trees of Vicar of Wakefield, Easter Beurre, and many other sorts, so overloaded that full one-third of the crop would no more acquire color, and become melting, juicy, and sugary, than would a piece of India rubber!

First, then, *secure well grown specimens, by good care and culture.* I will now mention, very briefly, a few of the more important facts in gathering and storing:

1st. *When to Gather.*—We are usually compelled to gather our own winter Pears in or about the last week in September,

because about that time we are often visited with violent storms of wind and rain, that beat the finest specimens to the ground, and because the opening of our fall business brings so many strangers, workmen, and others into the grounds. Gathering at this time, we find it somewhat difficult to prevent them from ripening before the time when they are most needed and most valuable. The best way, we find, to retard them is to put them in very small boxes or jars, or in thin layers on shelves, in a dark, cold room—say a deep, dry cellar on the north side of a building. The best time to gather is after the warm, autumn weather has passed—say middle of October—both in Western New York and, I should say, in Wisconsin; the main point being to have them out of the way of sharp frosts.

2d. *How to Gather.*—Every specimen intended for long keeping, should be picked by hand, one by one, seizing the stalk and lifting it upwards, to separate it from the branch. I would as soon allow my trees to be broken as the stalks of the fruit. As they are picked, they should be laid gently in baskets, in which they can be carried to the barn-floor, or some convenient similar place, to be assorted for storage.

3d. *How to assort them.*—Put all sound and perfect specimens by themselves, for keeping; and all imperfect ones, windfalls, &c., that will either ripen or decay soon, separately, for early use. This is of great importance, because one decaying specimen will, in a few days, affect a whole box full.

4th. *Storing them away.*—We find that when put up in barrels, or half-barrels even, they will ripen quickly during the mild weather of autumn and early winter, even in the coldest cellar. It is, therefore, necessary to put them in very small boxes or jars—say a peck or less in each—or else spread them on shelves in the coldest place, not below 40°, that can be had. Nurserymen who have but a few specimens of each, may keep

them nicely in clean flower-pots, if they have no shelf-room for them.

Each sort should be carefully labelled with its name and usual season, and all of the same season arranged side by side, that they may be the more conveniently examined as their season of maturity approaches. They will require a weekly visit at least, to see that decaying specimens are promptly removed, and to see how the ripening goes on.

5th. The requisites of a Fruit Room.—

1. The temperature should be uniform.
2. The external air should be excluded.
3. The light should be excluded.
4. It should be what is called dry for a cellar or store room, and cool as possible, not to go below 40°.

A good, deep, dry cellar, having thick walls in the north side of a building, may answer very well. It may be made on the top of the ground, by having double walls, in the way of an ice house. There should, of course, be a provision made for ventilation, but currents of air and strong light must be excluded.

Such sorts as the *Lawrence*, *Epine Dumas*, *Doyenne Sieulle*, *Winter Nelis*, *Vicar of Wakefield*, *Easten Beurre*, *Doyenne d' Alencon*, *Jaminette*, *Beurre d' Aremberg*, *Passe Colmar*, *St. Germain*, both the old and Prince's, and some others, ripen well in such a room. I do not find it necessary to bring them into a warmer temperature to fit them for the table, though this may be done to hasten their maturity. If it were desirable to hasten the ripening, it can be easily done by putting a quantity together in a box, covering it up closely and placing it in a temperature of say 50° to 60°.

On this subject I have perhaps said enough for the present; and now I will comply with your second request, viz: to give "a list of pears for culture on the quince, and of those which should always be worked on the pear."

1st. Good pears which we know succeed well on the quince:

Tyson,	White Doyenne,
Buffum,	Howell,
Beurre d' Amalis,	Louise Bonne de Jersey,
Beurre d' Anjou,	Urbaniste,
Beurre Diel,	Easter Beurre,
Beurre Superfine,	Doyenne d' Alencon,
Belle Lucrative,	Glout Morceau,
Duchess d' Angouleme,	Vicker of Wakefield,

Jaminette.

And for cooking, Easter, Bergamot, Catillac and Uvedale's St. Germain, or Pound.

2d. Valuable varieties that should be grown exclusively on pear stock:

Bloodgood,	Paradise d' Automne,
Bartlett,	Sheldon,
Washington,	Prince's St. Germain,
Beurre Bosc,	Winter Nelis,
Beurre Bergamot,	Dix,

Marie Louise.

I might include many more in both of these lists, but leave out all that are doubtful in any region.

Yours, &c., P. B.

CULTIVATION OF THE PLUM ON THE WILD STOCK.

BY JOHN G. KANOUSE, OF COTTAGE GROVE.

DEAR SIR: I herewith send you the results of my experience, and my observation in relation to the Wild Plum, as a standard for grafting or budding.

1. Grafting the English Plum in the Native, renders them much more hardy and less liable to injury by our hard winters.

2. They will fruit from 2 to 3 years earlier than when grafted on the English Stock.

3. The fruit is less liable to injury; the crop more certain.

This practice has one disadvantage, viz., the tree will be somewhat dwarfed. This can be remedied by planting more of them. My method of cultivating is as follows:

Early in the spring I go out in the forest and take up the Native Plum, about one inch in diameter, being careful to take as much of the root as possible, uninjured. Cut off the tops, then take the roots home; then with a fine saw take off the body about one inch above the roots; insert the scion, and then set them out where I intend to have them fruit. The scions should be of the present year's growth, and *one of the buds must be under the ground.* If the scion dies, still the root is sure to sprout, and then you can bud the sprout the next year If you desire fruit the second year from the scion, select large trees, take them up with great care, and graft in the top; but these you will be likely to lose with high winds, &c.; and yet this practice will abundantly repay any man on a new farm. By staking the scion he may have fruit for two or three years, and then his others grafted at the ground, will take their place.

Respectfully yours,

JOHN G. KANOUSE.

PLANTING AND PRUNING ORCHARD TREES,

BY D. MATHEWS, OF BURLINGTON, WIS.

DEAR SIR:—

In compliance with your request, I will mention those fruits, and those only, which we have pretty well tested.

The trees have been planted from eight to ten years, and have done well in every respect. I omit some from the list, which "promise well," for the reason that they have not been sufficiently proven, and some others also, that seemed right in every respect, until slightly affected by the winter of 1855 and 1856.

SUMMER APPLES.

Carolina Red June, Early Harvest, Red Astrachan, Sweet June, Duchess of Oldenburg, Sops of Wine, Summer Queen.

AUTUMN APPLES.

Late Strawberry, Bailey Sweet, Fall Orange, Fameuse, Porter, Colvert, Yellow Ingistris, Maiden Blush.

WINTER APPLES.

English Gold Russet, Jonathan, Swaar, Rawle's Janet, Westfield Seek-no-further, Talman's Sweeting, Yellow Belle-flower, Pomme Grise, Hubbardston Nonsuch.

PRUNING.

I do not pretend to be an expert, but my impression is, that after cutting out the small, stunted and dead branches, the less pruning the better. The best season for pruning is, I think, Feb. and March.

PLANTING.

Before planting, I would have the ground thoroughly plowed, turning the back furrows where the rows are to be.

The holes should be dug only deep enough to permit the tree to be planted as it stood in the nursery, and wide enough to permit every root to be planted in a natural position. The newer the land, the better; if not new, it should be well manured, and the manure thoroughly worked in with the plow.

No manure should be put in the hole at the time the tree is planted. After planting the ground for two or three feet about the tree it should be covered with manure or litter; we have saved many trees by this mulching, and got a much better growth than we could have had without it.

I formerly pruned the tops of my trees before planting, but my observations have satisfied me that it is not a good practice.

I have noticed that some trees in my vicinity which were planted without being pruned at all, did much better than mine which were cut in pretty close.

THE CHESTNUT.

The Chestnut, with me, is perfectly hardy, does well, and comes into bearing young.

Some trees which were quite small when planted, eight years ago, have borne fruit for five years.

The tree is a moderate grower.

EFFECTS OF THE WINTERS OF 1857-8.

BY FRANCIS DRAKE, OF RACINE.

I have not now time to give you the benefit of my experience as intelligibly as I would desire, and will only name a few varieties of Apple that have succeeded with me the best. I planted, in May, 1856, a block containing 400,000, which was pronounced, the following autumn, by several eastern nurserymen, who chanced to visit me, the best block of trees they ever saw; so strong and uniform was their growth. The following winter did little or no injury to the tops, although it embraced over eighty sorts; but upon examination, I found that they were seriously damaged at the root, to what extent the summer alone could reveal; and a sad revelation it proved, as at least three-fourths "gave up the ghost." And of those that survived, without scarcely a failure, I have to speak, viz.: Red Astrachan, Vincent, Rambo, Colvert, Wagener, Twenty-ounce Pippin, Saxon, Washington, Strawberry, Hubbardston, Nonsuch, Primate, Flower, Genesee, Perry Russet, Golden Russet, Talman Sweet, Seek-no-further and Northern-Spy. A few other sorts did tolerably well. These, you will notice, are strong growers, and generally hardy at the tops.

The soil was prairie, with a stiff, retentive sub-soil. The winter of 1856–7 was a very unfavorable one for such soils. The 400,000 trees, heretofore referred to, were worked upon roots, averaging three inches each.

It was considered at that time, by those of experience, that the third cut was only time and stock thrown away. I resolved to experiment, and saved the feeblest cuts (those that I had usually thrown away), packed and planted them separate, amounting to over 30,000. The result was surprising—all those sorts before named did full as well as those grafted upon

first cuts, or sections of the root, and have grown quite as rapidly.

I have lost nothing from damage at the root, since the winter referred to.

FRANCIS DRAKE.

January, 1860.

TOPICS OF INTEREST TO FRUIT GROWERS.

BY JOHN TOWNLEY, OF MOUNDVILLE, MARQUETTE CO.

DEAR SIR: I willingly comply with your request, to send you a list of the fruit I have tried here, with the results obtained. My experience as a fruit-grower in Wisconsin, is but limited; and commenced, moreover, under circumstances not very favorable for arriving at satisfactory conclusions. With the *Horticulturist*, *Albany Cultivator*, and Eastern Catalogues for my guides, I made my first purchase, and, of course selected varieties, on account of their Eastern reputation; but any one acquainted with the history of popular varieties of fruit in this or other countries, might have been sure beforehand, that many highly esteemed kinds, perfectly well adapted to some of the Eastern States, would be likely to prove worthless when tried here, and such proves to be the case.

My trees were bought in the fall of 1851, from Col. Benj. Hodge, of Buffalo, N. Y., and they certainly did credit to his nursery; they were addressed to the care of a valued friend in Milwaukee, but owing to the length of time it took a letter to reach me, and also, to some mismanagement of my own, I did not get the trees in the fall, as I had intended. When my land was thawed out in the spring, I went to Milwaukee for them,

and found they were unfortunately situated on the north side of a three or four story brick building, the ground being as solid as in mid-winter; the result was, they did not reach me till somewhere about the beginning of May, when the weather was dry and bright. I burried them in the soil a few days, and poured water from a pitcher down their chief branches, and then, before or about sunrise, for about six weeks after planting, till those which would grow had got fairly started. Very few died outright, but some were evidently so much injured as to afford no reliable testimony as to the suitableness of the varieties for this locality.

I have fruited Am. Summer Pearmain, Early Harvest, Early Strawberry, Summer Rose, Talman's Sweeting, Fameuse, and Lady Apple.

In point of flavor the Pearmain ranks first, in my estimation, and when grown where the sun can reach it well, so as to bring out its color, it is a very handsome apple. Early Harvest well deserves its high reputation, and it ripens at a time, as its name denotes, when a good, juicy apple is most palatable and refreshing.

The fruit I have had of Summer Rose, has been very beautiful, and as good as it is handsome.

Talman's Sweeting was noticed in the Horticulturist by Mr. Downing, as being unrivalled, amongst baking apples, for its honied sweetness, and it is certainly most delicious—the best, I think, I have yet tasted for that purpose, and it is superior to all others I have tested in point of hardiness. It passed through the ordeal of the two hard winters, to all appearance, unharmed. Out of three or four hundred seedlings, I have not one which seems so much at home, so healthy and vigorous, as this variety, It makes a good growth of young wood annually, and its bark is almost as bright as that of a melon. It was also the first to bear, with me, and one of the first to bear with my brother. Our high opinion of this apple for this locality, induced me to order, as you might notice in my recent purchase of you, twice as many of this, as of any other variety.

Fameuse grows freely, and bids fair to prove useful.

Lady Apple has hitherto done well with me. It produced its clusters of pretty, crimson-cheeked fruit last season for the first time.

The bark of Early Harvest continues brighter than that of most others, but I should like this and Summer Rose better if they produced more wood, and fewer blossoms.

Of trees I have not fruited,

Red Astrachan, raised from grafts received from Hovey, of Boston, and worked before the hard winters, grows very strong and thrifty. I have Northern Spy from Buffalo, and also from Boston grafts. They have grown tolerably well so far, but the Buffalo trees have not yet blossomed. I purpose trying, next season, the effects of high feeding on these trees, which nurserymen say agrees best with this variety.

The growth of the Mother apple is not satisfactory, it has not blossomed.

Gravenstein and Æsopus Spitzenburgh, have both failed. I have not one useful plant left of Rhode Island Greening and Fall Pippin, of which kinds I had six trees each. Three trees of Fall Pippin, made considerable growth the first four years, but the bark on the southwestern side of the stems is killed, and rotted off, and of course the trees are worthless. They have blossomed three or four years, but never fruited. One tree died down to the ground, but afterwards produced a strong shoot from the root. This I trained with a low head, so that when the tree is in leaf, the stem is shaded. Some consider this the chief advantage of low-headed trees, the foliage protecting the stem from the injurious influence of the direct rays of the sun, thereby preventing the cracking and destruction of the bark on the sunny side. But I suspect this mischief is done long before the leaves unfold. The appearance of my short stemmed Fall Pippin, indicates that it will soon be as worthless as the others, and the bark of the large trees is destroyed on the leading stem, at least 18 inches above the lowest tier of branches. Very early in the season sap will flow on

one side of a tree, when it will not on the other, and the destruction of the bark on the sunny side is probably the result of alternate freezing and thawing, and not by rupturing the cells, as is generally supposed, but by destroying their vitality. A hay band twisted round the stems of tender varieties may be found useful.

Of pears I have tried about twelve varieties, several on the quince, and have not a useful tree left. Two trees of Flemish Beauty on pear stocks, were the pride of my orchard. They branched about 18 inches from the ground, and formed naturally beautiful, well-balanced, pyramidal heads. In the spring of 1856, I found the young wood was injured, but not killed; next spring more than half the branches were dead. But even as regards the pear, there seems to be some ground for hope. Oswego Beurre and Steven's Genesee, are reported by Mr. De Neveu, to have borne fair crops in the neighborhood of Fond du Lac, but of several seedlings, I have one which has hitherto shown no signs of injury from frost.

I would here venture to suggest whether it would not be within the province of the Association to obtain seeds, next year, if too late for this, of the best of Mr. De Neveu's pears, and of the finest fruit of the best seedlings raised by Mr. Moses M. Strong, and place them in the hands of individuals in different parts of the State, who are likely to appreciate the importance of an united and extensive effort being made to obtain new and improved varieties, better adapted to this climate.

Cherries have not succeeded with me much better than pears. The winter of 1855-6 killed Black Tartarian, Downer's Late Red, and Knight's Early Black. The last two kinds had grown well and made handsome trees. Yellow Spanish died the following winter. The old May Duke yet lives. Both of my trees, however, were injured especially by the winter of 1856-7. The bark of the stem split on one side, and the wood, where exposed, seems dead. The wounds are being rapidly closed up by the formation of new wood. The trees grew vigorously last season, and produced fair crops of fruit for the birds' especial

benefit.* From the way these trees acted as they came into leaf in the spring of 1857, I am led to conclude that the May Duke would succeed still better than it now does, if it could be grown upon its own roots; it is certainly hardier than the Mazzard, the stock, I believe, cherries are commonly worked upon. Is it not possible to raise young plants cheaply and quickly by Knight's method, viz: a midsummer cutting, consisting of a single well-developed bud, with a mature leaf attached.

I believe it is generally conceded that the Morello Cherry is much hardier than the May Duke, and having faith in the opinion of Andrew Knight, that by improved culture, and successive generations of seedlings, a race of sweet cherries of large size will probably be obtained, I shall be glad to contribute my mite towards a liberal premium to be offered for a seedling from the Morrello raised in Wisconsin, which shall be considered by competent judges, an improvement upon the original.

After what has been said about pears and cherries, I need hardly mention peaches. Besides some budded plants which it is needless to particularize, I afterwards purchased a dozen seedlings, said to be raised from an extra hardy variety; and they certainly grew well enough for two or three years. A neighbor has, still, two of them growing on a slope facing the south, and well sheltered from the west and north; both trees blossomed last spring, and one ripened a single fruit.

If peaches cannot be grown in the open air as standards, can no other means be devised by which we may grow them cheaply and with certainty? Flued brick walls with glass cases, I suppose, are out of the question. Cheap orchard houses, which you are probably aware, are so much the fashion in England just now, would be within the means of many. In these houses the trees are grown in tubs. Peaches, nectarines, apricots, plums, cherries, figs, and even pears, in skillful hands, yield good crops of superior fruit; but in this country some heating ap-

*Netting for the protection of Fruit from birds, is advertised in Lindley's paper, at 2 cents per square yard. Do you know if netting for this purpose can be had here equally cheap?

paratus would be required in winter, to prevent the blossom buds from being destroyed by frost, and some protection would be needed for the glass in case of ice storms in summer.

But if this cannot be done by all, I do not see why every farmer should not grow two or three trees successfully, if he only knows how, and will take the trouble. Is it not possible to make available the sides of barns and granaries for this purpose? Some of the hardier pears, and the Catawba and other superior yet somewhat tender grapes, would probably succeed well, if trained to the sides of barns, and properly cared for. An old molasses barrel, or some such cask would not cost much. This would make two tubs in which two budded peaches might be grown and trained against the granary. The tree thus situated would be under the control of the grower; by applying suitable food they might be induced to make their chief growth early in summer; by rubbing off early shoots, which, pushed where they are not wanted, by properly training those which are to remain; finally pinching off the ends when it is too late in the season for dormant buds to start, and by limiting the supply of water as the season advances. The great desideratum for a crop of fruit in the succeeding year, viz: perfectly ripe and mature wood, would be obtained. Then, when growth was over, and danger from frost apprehended, it would be no great trouble to unloose these trees from the granary and carry them in their tubs into the cellar, there to sleep safely till spring.

I have observed, and especially during the the last summer, that many leaves on the young shoots of my apple trees were curled as though they were infested with aphides. The margin was generally dead and brown; next came an irregular pale green band, while a small space, each side the middle, retained its proper dark green color. This can hardly be otherwise than injurious. The efficiency of these leaves as sap elaboratory organs must be greatly impaired. The young wood on which these leaves grow, can hardly be so solid, or the tree so well prepared to set and mature fruit in the follow-

ing year, as if these leaves when once formed, had remained till the end of the season, in a healthy and efficient state.

In the early part of summer we have not unfrequently a succession of dry hot days; during this time, heat necessarily accumulates in the soil, and if the dry spell is followed, as often happens, by a drenching thunder storm, followed by two or three hot close, steamy days, young shoots make rapid progress. We experienced something like this last summer: about the 14th of June, we had fine, warm, growing weather; from the 16th to the 24th, it was very hot, with a strong wind, in the middle of nearly every day during that time; in the afternoon of the 24th, there was thunder with very heavy rain, so that water stood on the land in pools; the weather continued very hot until the end of the month, when it became somewhat cooler, and about the middle of July, crops, hereabouts, were beginning to suffer from drouth. The curling of the leaves is probably due to the action of bright sunshine with a dry atmosphere; but whether the mischief is done on the occurrence of dry, bright weather, immediately succeeding a period of rapid growth and before the tissue of the leaves has become hardened, or, only after protracted dry weather, when vegetation generally suffers from drought, I am not prepared to say, my observations hitherto, not having been sufficiently accurate; but the fact that the previously formed leaves on spurs remained healthy, would seem to indicate that the former is not likely to be the case. But which ever it may be, it has occurred to me, that mulching will go far towards preventing this evil. One of the able and energetic Editors of the Wisconsin Farmer, remarked in the last June number, "Common fruit trees, well-set, and well mulched, can hardly die, but omit the mulching, and they can hardly live," and all who have had much experience in planting, will admit that the benefits derived from the practice are hardly too strongly stated. If this, then, is so favorable to healthy root action in the case of a recently planted tree, why should it not prove equally beneficial to young trees for a few years at least, after they have become established?

The soil being shaded from the direct action of the sun, would remain comparatively cool and moist; when rain fell, much of it would be retained by the soil, and not pass rapidly off as vapor, which must be the case to a great extent, when the bare soil has become dry and heated by a continuance of dry, bright weather. A high earth temperature, with moisture, and a hot, damp atmosphere, are conditions highly favorable to the rapid development of tissue; but if by mulching we can keep the earth comparatively cool, and of a more equal temperature, two or three hot, damp days, will not, it is presumed, have the same forcing effect on our trees; and the greater amount of moisture which will be retained by the soil, will afford a more regular and continuous supply to the roots, and thus enable the leaves not only to withstand the scorching effects of the bright sunshine, but to take advantage of this bright light, to prepare and store up a greater amount of elaborated sap, on which all new growths, and the production of fruit, essentially depend. Let all who wish to aid in solving the problem, how to grow fruit sucessfully in Wisconsin, try this, if it be only on a small scale; the trouble will not be much, the benefit to be derived may be great.

The strawberry, which grows naturally best, in a strong, rich, rather moist soil, I find makes a most grateful return for the labor bestowed in mulching.

From what we know of the history, wild and cultivated, of the gooseberry and currant—there can be little doubt, that if mulched every year, their growth generally, will be more thrifty. The English gooseberries, as is generally known, are so liable to be attacked by mildew, here, as to be almost worthless; but I remember reading a statement in the Prairie Farmer, some years ago, by the Editor, Mr. Wright, that in his garden at Chicago, they did not mildew. He was combating the opinion, erroneous, as I believe with him, that the so-called pistillated varieties of the strawberry, never, under any circumstances, produce hermaphrodite flowers. In his garden they produced perfect flowers; this, and the freedom of his goose-

berries from mildew, were probably owing to this cause: His garden was nearly on a level with Lake Michigan, and the soil six inches below the surface was always moist.

It may be advisable here to state, that it is not advisable to use wood chips for mulching. Examine a heap of rotting chips in summer, and you will find them covered by a net work of white filaments, the spawn of some fungus. The Rev. M. J. Berkly, of England, discovered last year, that the spawn of a fungus originating on decaying wood, in the soil had the power of fastening upon and destroying the roots of living plants; since then, many cases have been referred to him of grape vines, fruit trees, and flowering shrubs which had died in a mysterious manner, without any apparent cause, and in several cases the roots were found to be attacked and destroyed by fungi.

The injury done to the crops of the farmer and gardener, by this tribe of plants is enormous. Mildew renders the growing of hops in Europe little better than a gambling speculation. How great has been the loss sustained in the wine producing countries of Europe by an attack of mildew on the grape. How much misery has been produced, how much food destroyed, and labor rendered vain by the mildew of the potatoe? and who can form any notion of the loss annually sustained by attacks of smut, rust, and mildew on grain crops alone. I know of no branch of natural science which seems as likely at some future day, to render such important service to the cultivator, as a thorough, experimental knowledge of the habits of these plants. What are the conditions that favor their growth, and contribute to their power; and what remedies can be devised, what precautions taken, to guard our crops from their attacks? Sublimed sulphur, dusted on the leaves of the hop and grape-vine, when these plants are first attacked, is found to be an efficient remedy; yet it produced no effect on the mildew of some other plants to which it was applied. We may prevent smut in wheat, by steeping the seed in a solution of the sulphate of copper, but this affords no protection against an attack of rust or mildew.

Some species of parasitic fungi are known to flourish most in dry weather, others require moisture for their rapid development. Again, if we sow peas in spring or early summer, they will probably carry their crop to perfection without exhibiting any signs of mildew; but sow peas towards mid-summer, and the probability is, that the plants will be destroyed by mildew. This is the case in England, and I find it is so here. On the contrary, if we sow turnips or rutabaga in the spring or early summer, they are almost sure to be mildewed; the lower leaves will perish one after another, and the roots generally become more or less decayed; but sow seeds of these plants sometime after mid-summer, and the chances are that we shall have a healthy crop free from mildew.

The disease of the pear tree, which renders the raising of pear seedlings for stocks, so difficult in the Eastern States, is probably the work of a parasitic fungus. I ventured to make this suggestion in the *Horticulturist*, in the time of Mr. Downing, and advised that diseased leaves should be submitted to botanists distinguished for their knowledge of these plants, for their opinion; and I find by a late number of *Lindley's Gardiner's Chronicle*, that a gardener in Pennsylvania has consulted Mr. Berkely on the subject, who decides that the destruction of the leaves is caused by a fungus. Mr. Berkely ranks first of all British botanists, for his knowledge of these plants, and to him belongs the merit of proving that the parasitic fungus, named and described by him as *Botrytis infestans* is the immediate cause of the potato disease. Thirteen years have now elapsed since his observations were published. His conclusions were supported by the independent testimony of equally competent observers in other countries, and the experience of every subsequent year, has tended to confirm the accuracy of the conclusions at which he had arrived. Yet, notwithstanding all this, so little seems to be generally known respecting the action and power of these insects, that a generation will seemingly have to pass away, before even the conductors of farm journals, to say nothing of farmers generally, will

be able to understand, that what may be the immediate cause of the potato disease, is long since a settled question.

It is desirable that in all accounts of fruit-growing in this State, the nature of the soil, and the situation of the orchard, so far as regards shelter and aspect, should be stated. My trees were planted on a small knob, mostly on the north and west slopes. The soil is sandy, passing on the western side out of a stiff, rich, clayey loam. On the west is a thick grove of trees, but they do not afford sufficient protection against the usually strong winds from that quarter.

I have hitherto applied to my trees, yearly, a small quantity of rotten stable manure, mixed, occasionally, with black muck. Last spring I had to burn a quantity of worthless wood and brush, and I gave to each tree about two-thirds of a pailful of ashes before they were well cool, and forked them at once into the soil around the tree. I believe the trees derived great benefit from this application—they never looked more healthy, and the fruit they produced was very fair, rich, and high colored. It is common to recommend leached ashes for trees; but the alkaline salts, especially potash are probably the most valuable plant-food ashes contain, and any one who knows how rapidly caustic potash combines with carbonic acid, need be under no fear, I think, of injuring his trees by applying fresh ashes in moderate quantity, unless they are placed in contact with the roots.

It is considered that injury has been done by applying manure to fruit trees, and that a more sturdy and hardier growth would be the result of witholding it. This may be so on some soils, but I am disposed to try, cautiously, the opposite plan.

Two years ago I broke up a piece of rich bottom land, so overrun with small brush as to be almost worthless as a pasture. On seeding this down to grass last fall, I collected and hauled off a quantity of refractory sods, plowed up round stumps, some clay and some black muck, both full of fibrous roots; these, when dry, I formed into a pile with sprouts from stumps, &c., and smother-burned them, so as to reduce the vegetable mat-

ter to charcoal, not to ashes. This will form the basis of my fruit-tree manure. I have also obtained a quantity of bones, —the land hereabouts contains such an everlasting supply of phosphates, or some men must have such a supreme contempt for the teachings of chemists, that I have actually seen the bones of an animal which died on the land, hauled off to Mac-Adamize roads with. These I intend to break into small pieces, unless I can reduce them with fresh ashes, or with vitriol, if I can buy it cheap enough for that purpose.

Men are divided in opinion, whether an orchard should be under the plow or seeded down to grass. A path runs through the middle of my trees; one side was seeded down with timothy four years ago, the other has always been cropped with some hoed plant. About as many apple trees were planted on one side as on the other; but from the grass side I have not had a single apple, and an Imperial Gage, large enough to bear a bushel, has produced but two plums. A considerable space around the trees is kept free from timothy, and worked by that most efficient tool for that purpose, a four tined, steel manure fork. The orchard which has produced most fruit in this town was sown with red clover two years after planting, and has not been plowed since. The soil is naturally rich, the trees are favorably situated as to shelter, and a space round each tree is worked, and manure has been applied.

A. G. Hanford, Esq. John Townley.

DESCRIPTIVE LIST OF FRUITS.

BY A. VAN VLECK, OF WAUKESHA.

My soil is a strong, white oak, clayey loam; site of orchard, elevated, and descending to the east.

APPLES.

Tart Bough.—Hardy, productive, ten days after harvest, good early cooking; when fully ripe, good eating apple.

Westfield Seek-no-Further.—Unharmed by the late severe winter; productive, not always early bearer; some trees have borne good crops in six years from planting,

Van Vleck.—Sweet, tree an upright, strong grower, red, flat, yellow flesh, juicy, very sweet, ripens middle to last Sept., succeeds Jersey Sweet and quite as good, and the tree is more vigorous and hardy. (Probably Hog Island Pippin, Ed.)

Fall Pippin.—Think highly of it, does not bear as full as some, but fruit is very superior, trees injured a little in the forks.

Baldwin.—One of the most productive; occasionally affected with bitter rot, this year very fair; tree tender.

R. I. Greening.—Usually productive, good; would not be without it, though tree is rather tender.

Newtown Pippin.—Tree hardy, fruit fair, not very productive yet, trees planted thirteen years.

White Belleflower.—Tree hardy and productive, early bearer; fruit good.

Twenty Ounce.—Good bearer for a large apple, fruit good, tree injured by winter of 1858.

Talman Sweet.—Best winter sweet; some trees bear well others do not, no reason known.

Early Harvest.—Tree hardy, not regular bearer, occasionally bears very full; fruit fine.

Sweet Bough.—Tree tender and not productive.

Colvert.—Great bearer; fruit good for cooking.

PEARS.

Steven's Genesee.—One of the hardiest, productive; fruit large and fine. Grafted on pear stock four feet from surface; stock killed by winter while tops seemed unimpaired, and this was the case with all the pear trees which I lost.

GRAPES.

Clinton.—Hardy and productive, and very early, for which reason I esteem it the most valuable sort.

CHERRIES.

Black Tartarian.—I consider it very hardy and productive, except after extremely cold winters, when blossom buds are injured.

Yellow Spanish.—Hardy; fruit buds liable to winter kill; fruit superior.

PLUMS.

Imperial Gage.—Hardy, productive; fruit fine.

Washington.—Hardy except winter 1855 productive; fruit superior.

Yellow Egg.—Very hardy, productive, one of the most profitable.

DESCRIPTIVE NOTES ON APPLES.

BY O. S. WILLEY, OF JANESVILLE.

Of the numerous varieties in cultivation at the West, it may be truly said, "many are called but few are chosen;" so few, indeed, that many have abandoned the idea of cultivating fruit at all. We are satisfied that when a sufficient degree of experience has been brought to bear on the choice of varieties, location and modes of cultivation, we at the West can grow fruit enough for our own use, and to spare.—Fruit-growing here has its difficulties and drawbacks, and those of a very serious character.

The Borer, the Bark Louse, and, betimes, the blight, seem to lay hold on every thing. The richness of our prairie soils, the extremes of cold and heat, the unreasonable preferences of planters for trees with high heads ("to plow under"), render the fruit trees of the West fit subjects for the attacks of countless insects, the cracking of the bark, and other evils. But there are no obstacles so great, that the lover of the good and the beautiful should be deterred one moment from planting good and valuable kinds.

I send a list of those which may be confidently relied on for the *open prairie:*

Golden Russet, (of N. Y.)—Tree perfectly hardy, healthy, productive, and early bearer, somewhat irregular in growth, with speckled, slender shoots; fruit slightly tart, best. Season, December to March.

Roxbury Russet.—Hardy, medium grower, irregular and spreading; often crooked when young; moderately juicy; sub-acid. Origin, Massachusetts; season, January to June.

Winter Swaar.—Early bearer, but not productive; hardy, healthy in orchard, and one of the best of fruits; juicy and tender. Origin, New York; season, January to March.

Yellow Belleflower.—Much called for, and of high reputation; tree hardy, healthy, vigorous and productive, making very slender growth, and standing our winters unharmed.—Fruit, best. Season, December to March.

Pomme Grise.—Hardy, thrifty and upright, forming a beautiful, low-headed, medium sized tree, productive and well adapted to the West; fruit medium, Russety, pleasant. Origin, Canada; season, December to February.

Jonathan.—A hardy, healthy and medium sized tree; shoots slender, and said to be productive; fruit showy and pleasant. Origin, Kingston, N. Y.; season, December to February.

Northern Spy.—Sometimes tender when young; upright, vigorous grower, forming a close head; can't say the tree is known by its fruit, till of a "good old age." Origin, New York; season, January to April.

Green Sweet.—A hardy, healthy and vigorous tree; upright in habit; second to but one among the sweet apples; fruit medium; very sweet. Season, December to March.

Talman Sweet.—Rapid, upright grower; hardy, healthy and productive; fine for baking; keeping a long time. Fruit, best winter sweet apple. Origin, Rhode Island; season, November to April.

Fameuse or Snow.—Tree of medium size, slightly diverging; hardy, healthy, early bearer and productive; fruit showy; tart, and pleasant flavor. Origin, Canada; season, October to January.

Holland Pipin.—Irregular, spreading tree, of vigorous growth; early bearer, and productive; fruit large, pleasant, esteemed for cooking. Season, October to December.

Twenty Ounce Pipin.—Tree very hardy, early bearer and productive ; irregular in growth ; fruit coarse, second rate.—Origin, New York ; season, November to January.

St. Lawrence.—Tree vigorous, hardy, healthy, and productive ; upright but spreading top ; fruit rather acid, agreeable. Origin, Canada ; season, September to October.

Keswick Codlin.—An upright, free grower, early bearer, of second-rate acid flavor, suited for cooking only. Foreign ; season, September to October.

Sops of Wine.—Upright, hardy, healthy and vigorous tree. Buds very prominent on scions. Not fruited it. Season, August to September.

Early Joe.—While young, is a very slow grower, but improves in the orchard, forming a round, somewhat irregular head, of medium size. Hardy, healthy, early bearer, and very productive. No garden should be without it. Fruit has a very delicate, peculiar tart flavor. Origin, Connecticut ; season, last of August.

Golden Sweet.—A rapid grower when young ; hardy, spreading and irregular shaped tree ; productive. Fruit fair and very rich ; best of the early sweet apples. Origin, Connecticut ; season, July and August.

Red Astrachan.—A very valuable, strong growing, perfectly hardy, healthy and productive variety ; rather acid ; one of the "best" for the kitchen. Foreign ; season, August.

German Bough.—Tree hardy, medium size, and early bearer, regular and upright grower. Fruit slightly tart, "best." Season, August.

Of other fruits, such as pears, plums and cherries, I am sorry to say I cannot report much "progress." The blight has taken the pears, which I am now planting again, worked on their own roots, and dwarfed by annual prunings. Late in the fall,

I raise a mound two feet high, or more, around them, and, thus far, the "earth promises to bring forth its fruit" in due time. Of "smaller" fruits the only query is, "why are there no more planted?" Thriving remarkably well—nowhere better—and giving their annual returns of joy and blessing, still not one in ten can say they have a supply of them. The grape, so easily managed, if "you only know how," is almost forgotten, which is wrong, all wrong. Since many varieties thrive with the let alone system, nothing need deter any one from having a full supply six months in the year.

BY A. SLOCUM, OF LIMA, WIS.

DEAR SIR: In reply to your letter requesting my experience in fruit growing, I would say that I have been unfortunate with part of my orchard.

The Swaar and Baldwins are first rate apples, but all dead. The Virginia Pippin and Black Gilliflower are good sorts, but the trees are dead. The Butter apple, Rambo, Domine, Holland Pippin, still live. Black French, Waxen and Ribston Pippin are hardy, of the best quality, and good bearers. A yellow seedling apple, of my own, I class with these. Maiden's blush is hardy, a good bearer and of good quality. Roman Stem good, and a good bearer. Seek-no-further and Red Spitzenberg, are very good and good bearers. Dwarf Bearer good, very hardy, and productive to a fault. Gravenstein good, slow grower. Jersey Sweeting, and Pound Sweeting good, upright growers and poor bearers. Northern Spy good, and good grower, hardy, a shy bearer. Newtown Pippin, the hardiest tree, slow grower, best quality. Blue English and Herfordshire Pearmain, hardy, good growers, middling bearers, very good quality. English Russet, hardy apple, good and a good bearer. There is one Romanite, (Pennock, Ed.;) it is a large red apple, the tree is hardy, but the apple poor. Small Red

Romanite, good and hardy. I have several kinds of apples which I have not fully tested, some of them Ohio apples, not common here. Yours with respect and esteem,

A. SLOCUM.

A. G. HANFORD, Esq.

BY GEO. J. KELLOGG, OF JANESVILLE, WIS.

A. G. HANFORD, ESQ.:

DEAR SIR:—Circumstances making it impossible to meet with you, I suggest a few thoughts for inquiry. We must seek for fruit trees that will pass unscathed at a temperature of 50° below zero. January, 1856, will long be remembered as our first severe lesson; and, although better prepared for it, yet we shall not soon forget January, 1860.

Long have we been propagating *too many varieties* of the Apple. What shall we grow? We should choose,

1st. *Hardiness;*

2d. *Productiveness;*

3d. *Quality.*

I have found, by experience and observation, that there is hope in the following varieties:

Red Astrachan,
Early Harvest,*
William's Favorite,
Cal. Red June,
Hightop Sweet,
Keswick Codlin,
Fameuse,
Duchess of Oldenburg,*
St. Lawrence,
Fall Queen,
Wine Sap.
Fulton,
Yellow Belle-Flower,
Jonathan,
Talman Sweet,*
Pomme Grise,
White Winter Pearmain,
Domine,*
Eng. Golden Russet,
Rawle's Janet,
Red Romanite.

*Little tender.

Of the Currant, I can say, not profitable except in bush form, and the old wood removed every third year; and then the *borer* may take off the *profits* as well as the *bushes*. The borer works more in the red than white Dutch.

Any practical information for the *successful propagation* of the Grape, would be very acceptable, as we cannot depend on the Isabella and Catawba, even after protection.

Yours for the success of fruit in Wisconsin, against *all opposition*.

GEO. J. KELLOGG.

EXCESSIVE CULTIVATION OF FRUIT TREES.

BY O. P. DOW, OF PALMYRA.

CHAS. GIFFORD, ESQ:

DEAR SIR:—Having received from you a note, in due season, inviting me to be present at a meeting of the Wisconsin Fruit Growers' Association, to be held at Whitewater, on the 19th and 20th January, 1860, I feel that I should at least make a short reply, and thank you for the timely notice and favor.

I am not a fruit grower, in *any* extended sense, much less a professional one; still, I have transplanted trees, and thereby added my mite to the continually increasing number of orchards, in our new and rapidly growing State. And, although I am not a fruit grower, still I am happy to encourage, as far as my small ability will allow, so noble and philanthropic a cause as that of fruit culture.

I consider it to be a work that has much to do with man's development, both physically and mentally; consequently it has

a claim upon the highest energies and efforts of every philanthropist, to make its interest more general. I hope that our experienced men in the profession of fruit growing will unfold themselves, and give us some new light upon this subject, and not withhold from the people what they should know.

In my very limited experience in fruit growing, I have made a few observations.

I have noticed trees that have sprung up, spontaneously, as it were, perhaps in some fence corner, or other uncultivated spot, uncared for, seemingly, never having come in contact with the pruning knife or the gardner's spade, to disturb their sweet repose and healthy growth by severing main roots, and thereby converting healthy trees, into sickly, dead hearted shrubs. I say that I have known such seedling trees, and under such circumstances to thrive and do well, while apparently as good trees, transplanted, nursed and cultivated, would wither, become rotten hearted, and soon go the way of all trees. Now, for this, there must be a cause—and it is because their roots and limbs, and even the soil upon which they stood was left undisturbed, and to nature. If not, why is it? It is a fact, that trees are very often injured by being taken up for transplanting. Many, I think, trim their trees too much, and by so doing deprive the tree, to a great extent, of the means of supplying itself with a sufficiency of that kind of food necessary to its healthy growth.

I have observed that our most thoroughly cultivated orchards and most highly enriched, are among those that have suffered most during our late severe winters. I believe that trees may be so much forced in their growth, in autumn, as to almost insure their destruction during a severe winter such as we have heretofore experienced.

I have noticed that orchards which have been seeded down, and the least cultivated, have best withstood the hard winters. It seems to be the case, almost invariably, that success in fruit-growing depends upon two important points—the condition in which the soil is kept, and the kind of trees planted. Of the

necessary condition of the soil, we have much to learn from observation. In reference to the kind of trees adapted to our soil and climate, we must trust much to our oldest *Wisconsin Fruit-Growers*, who have had the real experience and tested trees in reference to their hardiness.

I have full faith, in fair success, in raising most kinds of fruit in Wisconsin, when we better understand the condition of our soils and the climate. If I were to set an orchard again, I think I would prefer to set seedling trees; and if it should become necessary to graft, do so by grafting in the top, instead of the root. From what I have seen of trees coming from the seed, and proving to be good and true bearers, I think I should prefer planting the seed where I would wish my orchard to stand—the trimming to be done as necessity should direct. Last spring, in examining my apple trees, I found that they were infested with the bark-louse, and pretty thickly stuck on. I concluded to try an experiment with lye; consequently I got the lye ready, and took a coarse broom and went to work scrubbing my trees. After having been washed about a week, I discovered that they slipped off very easily; whether this is a real antidote is yet to be further tested.

Yours truly,

O. P. Dow.

THE CULTURE OF THE GRAPE.

BY SMILEY SHEPHERD, OF HENNEPIN, ILL.

The severity of the two winters preceding the last, has had rather a disheartening effect upon fruit cultivators; more so, probably, in our State than yours. Intensity of degree in cold, apart from other considerations, is found not to be so fatal in

its effects, as some conditions that are inseparable from a rich, fertile country, with a variable climate. Wisconsin, with a sterner climate and a less exuberant soil, will probably be found more uniformly productive of all the staple varieties of fruits than Illinois. She will not probably succeed so well with some of the half tropical, (the pear for instance,) as Illinois, but the apple, pear, plum, cherry, and grape, in their most substantial varieties, will be as sure with you as with use; and the trees more durable. It seems now very probable, that all our apple trees that were in bearing in the summer of 1855, will struggle along for a few years, till death kindly takes them off, and makes room for us to plant more.

The pear, in nearly all of its varieties, has suffered very badly. The plum has fared worse than either of the above.—Of Cherries, the Heart and Bigarreau varieties are wholly cut off. The Peach, north of 39° latitude, was only left in very favorable situations. The smaller garden fruits, except some of the *fancy* Raspberries, escaped unharmed. The Grape, with me, suffered far less than it did at Cincinnati. I made a moderate crop in '56 and '57, and in '58 came (after one of the mildest winters we have had for many years,) as near having no crop as was at all desirable—say about five per cent of a crop.

The failure of the Grape was owing to causes that took place (as I judge,) in the summer of the preceding year. In the two winters preceding the last, the vine had been somewhat pinched, but still yielded a fair crop, under the disadvantage of very dry summers. The drought of '57 was very rigorous, and, perfecting the crop, so exhausted the vine, that it did not even make the germ of fruit in the bud; and of course without blossoms we could have no fruit. What few little clusters did set fruit, were so sparse and ragged as to be poor apologies for grapes.

The Isabella has thus far succeeded so very well with us, as table and market fruit, that we we have not been induced to seek for any thing to compete with it. The Catawba does as

well here as it does in the Ohio valley, and will produce as good a wine, and yet I do not think it as valuable as the Isabella, for either the table or wine press.

I have made wine of both kinds, and, except by a *hypercritic*, the Isabella has the preference nine times out of ten ; and in point of product, will excel the Catawba by more than twenty-five per cent.

I find that soil, as well as climate, has a very material effect upon the quality, productiveness and health of the Grape.— Thus, a neighbor of mine has a vineyard, situated on a clay soil of rather a whitish color. His vines grow very well ; his grapes are large and fine in appearance, but are inferior in point of quality or flavor. Another in an adjoining county, has his vines on a side hill, where several thin strata of coal crop out amongst them. Here the Isabella fails entirely, while the Catawba comes to the greatest perfection.

You *may be* situated so far north as to preclude the ripening of some kinds of the Grapes cultivated now, but I feel confident that time and experience will point out soils and situations, in your highest latitudes, that will grow Grapes of a quality well suited to either the table or wine press. The fact is, dear sir, that the cultivation of the vine is so much in its infancy, that we are as yet entirely ignorant of what our soil and climate will produce, or of the variety and excellency of the fruits within our reach, provided they were sought out, and, by skillfully adapted cultivation, in a good soil and situation, have their merits brought to the test.

The Concord may be one of the Grapes you are in need of. I have not fruited it yet, nor am I sufficiently informed of its success in different localities and soils, to warrant my giving any opinion about it. I fruited last year, for the first time, the Delaware Grape, a native of Ohio, where it has been cultivated for many years, without attracting any notice, simply because it was a small Grape, found growing in the woods, in a poor part of the country, without anything in its appearance name, or foreign birth, to entitle it to the least regard. Lately

however, it has been taken up, and is now likely to supersede the Isabella for the table, and compete well with the Catawba at the wine cask. My brother, Rev. I. N. Shepherd, of Marrion, Ohio, writes me, lately, that of some twenty varieties he has tested, he thinks it the finest variety for the table that he has met wit, and so good does he esteem it, that he contemplates setting some ten acres with it next spring. Its latitude, 41° north, and natural habit of soil, in many respects resemble Northern Illinois, perhaps a little more sad and clayey. The sample I produced was sweet and delicious, but small in comparison with the Isabella.

The mildew on the grape or vine, I have never seen but once in Ill. It was then on a vine of the Fox Grape, growing in a low, murky place near an old dung heap, and surrounded with a dense growth of weeds, as high as the highest branch of the vine. I thought the result a very natural consequence of the condition.

The rot, such as is common in the Ohio valley, the interior and southern portions of this State, Missouri, and southern Iowa, has never shown itself in my neighborhood, but once; and then, only lightly, in comparison with its effects as felt further south. There are evidently certain periods in the growth of the fruit and vine, modified largely, I think, by the soil, culture and training it is receiving, that makes it more or less susceptible of the evil influence of that atmospheric condition in which the rot abounds.

A damp, foggy morning, followed by a close warm day, occurring in the Ohio valley, any time in the months of June or July, will show a visible effect, and at some of the most critical periods, three such days occurring together, would cut off the whole crop. So susceptible is the Isabella to the rot, that its cultivation in the neighborhood of Cincinnati, has been entirely abandoned. All the varieties they cultivate in the open air suffer badly, and in some seasons, fail entirely.

With us the Isabella may be considered safe, three years out of four, provided the situation is high and dry, the cultivation

clean and careful, and pruning so performed that a perfect ventilation is admitted.

These are the only preventative and remedial measures that I have used or recommended, and for our region they seem to be sufficient.

There are two other aspects of rot, or blight, that I have satisfactorily traced to causes beyond our control, or mitigation; one of them confined to the Catawba, which with us, never rots, and the other appearing upon the Isabella. As they do but little injury compared with the rot, we can safely, and thankfully, trust them in the hands of Providence, and rejoice in the abundance we enjoy, notwithstanding their existence.

BY. M C. RUSSELL, OF GENEVA, WIS.

The Isabella and Catawba I think the best varieties we can raise in this latitude.

I plant the vines four feet six inches apart each way, allowing only a single stake, about five feet high, for each vine.

The most essential part of grape culture is proper pruning, which should be done mostly in the fall or early winter. I practice the renewal system—cutting away every year the previous year's growth—leaving only a single vine of the last summer's growth, with as many leaf joints above the ground as the vine is years old from the planting of the scion; or, if the vine is of a very strong growth, I leave more, say ten joints on a vine six years old, which will be about five feet long.

For safety against winter-killing, I lay them on the ground, and place a stone or some weight to keep them down. I let them lie till the buds are quite large in the spring, as in this condition they are not so apt to be injured by frost, or by the

rose-bug, which sometimes eats the buds when they first come out.

In the spring I bend the vines in shape of a hoop, tie the top down to the bottom, and the upper side to the stake. Each joint will throw out a branch, and each branch will have about four bunches of grapes. After the first is set, the branches should be broken off two joints from the last bunch of grapes. If they shoot out again, they should be pinched off. Only one good, strong shoot should be allowed to grow up from the ground and run up the stake, to be pruned in the same way for next year's bearing—cutting the old entirely away.

The foliage should be kept thin and open.

Dry, gravelly, or sandy soil, with a southern exposure, is the best—it need not be very rich. I have not seen any soil in this State that is too poor, or poor as the soil appears to be in the vineyards in the neighborhood of Cincinnati. They say, there, it does not pay to manure the ground.

The mode of pruning I have given is adapted to a vineyard, and will give more fruit on the same ground than could be obtained on trellises at the same expense. If the object is shade or ornament, one must be content with less fruit and poorer quality. Each may suit his fancy with a bower or trellis, but ner the foliage, the more and better the fruit.

LIST OF APPLES.

BY H. A. CONGAR, OF WHITEWATER.

WHITEWATER, Wis., January 31, 1859.

A. G. HANFORD:

DEAR SIR:—From the best information I can get, and my own observation, success in fruit culture seems to depend alike on a proper selection, as well as soil, location, and culture.

I find some of the oldest fruit-growers, in making a list of hardy apples, leave out some varieties that I find almost universally hardy and productive.

The subject you wish me to take up is of that importance that I hope to see the largest experience brought out. So far as my observation goes, I have found the Red Astrachan, Early Harvest, Caroline, Red June, and Sweet June, worthy of general attention. The St. Lawrence, Autumn Strawberry, Colvert, Duchess of Oldenberg and Summer Pearmain also are hardy. The Yellow Belleflower, Seek-no-further, Perry Russet, Golden Russet, Carthouse Winesap, Willow Twig, Talman Sweet, Tompkins County King, White Winter Pearmain, High Top Sweeting, and Fameuse, and some few others are generally hardy; and, I believe, equally hardy and productive root-grafted, except the Yellow Belleflower, which seems more productive top-worked.

I am satisfied that pears will do well enough, but I do not choose to make a list of varieties. I may say the same of plums and cherries. As to small fruits, all are agreed.

I think that the following list of grapes is the best for this climate, viz: Concord, New England, Isabella, and Clinton.

Yours truly,

H. A. CONGAR.

REMARKS ON FRUITS, ETC.

BY W. B. RANSOM OF FOND DU LAC.

DEAR SIR:—I have been in the State since 1843, moving from place to place, and but one season has passed in which I have not set out fruit trees, and I hope never to see a year, while I live, in which I shall fail to plant them. I have some sixty varieties of plums started, some of which are grafted on the wild stock. I like to graft in the top, and keep the heads well pinched in, especially the first summer. So managed they will frequently bear the second season. Grafting so low as that the scion will take root is a good plan; but these do not come into bearing as soon as those grafted on the top. The Lombard, Duane's, Purple, Imperial, Bingham, Damson, and Sugar Plum are profuse bearers. The last two named are good for drying for preserves and for market, and sell for almost as much as the finer kinds. Of Duane's Purple, I raised, last year, a peck from a graft in a wild tree. Most of my varieties stand the climate well. The Peach and the Apricot Plum are tender. The Curculio is troublesome to many kinds, but I have never known it to touch Duane's Purple.

Two pieces of board nailed together and tied against the trunks of the trees or bark, coiled by drying, and put around them, is a good protection in winter. When the trees are injured, they are hurt on the south or south-west side. The best time to graft plums is very early in the Spring; I have grafted successfully as early as 20th of March.

I have lost all my sweet cherries but "Tecumseh," which bore, for the first time, last year. It is a splendid cherry. The Kentish Red is as hardy as a burr oak, and bears well. Virginia Morello is also hardy and productive here.

The year after planting the "Tecumseh" I began to take from the trunk the outer bark in rings, one or two inches wide. In about four years I had gone over all the trunk, and some of the larger limbs; in August I bound the tree with straw, which I removed in the following spring; in the summer I kept the strongest shoots pinched in. The tree is now perfectly sound and healthy.

I have a great many kinds of pears, but have fruited but few. I think that with care they will do well. The native thorn promises well as a stock for dwarfing the pear. The shad blow of our woods will do very well for this purpose.

I am raising seedlings of grapes, plums, pears, strawberries, &c., and shall think myself well repaid for my trouble if I succeed in a single new variety of superior merit.

Yours, truly,

WM. B. RANSOM.

A. G. HANFORD, Esq.

CUTTING THE BARK OF APPLE TREES.

BY JOHN STRAIGHT, OF NEOSHO, WIS.

My apple trees bloomed full last spring, 1858. When the fruit was quite small it commenced falling off, and I thought I should lose all. In June I cut the bark lengthwise of the trees on the sides, the entire length of the trunk, and some of the largest limbs; no more fruit fell after that. I know of no other reason why my trees should have so many more apples than my neighbors'.

I find great advantage from mulching trees at time of planting. Of seven hundred trees set out in the spring of 1859, lost but two or three, the rest made a fine growth—ascribe my success to mulching.

CHAMPAIGNE FROM THE GOOSEBERRY.

BY F W. LOUDON, OF JANESVILLE.

Take large, fine gooseberries that are full grown, but not yet beginning to turn red, and pick off their tops and tails. Allow a gallon of clear soft water to every three pounds of gooseberries; put them into a large, clean tub, pour on a little of the water, pound and mash them thoroughly with a wooden beetle, add the remainder of the water, and give them a hard stirring; cover the tub with a cloth, and let them stand four days, stirring it frequently and thoroughly to the bottom; strain the liquor into another vessel, and to each gallon of liquid add four pounds of fine loaf sugar, and to every five gallons a quart of the best French brandy. Mix the whole well together, and put into a clean cask that will just hold it. It should be filled full —place the cask in a cool cellar on its side, and lay the bung loosely on top; secure the cask firmly, so that it cannot, by chance, be moved or shaken, as the least disturbance will injure the wine. Let work for fortnight, or till the fermentation is over, and the hissing has ceased, then bottle it, and drive in the corks tightly; lay the bottles on their sides, and in six months it will be fit for use.

AGE FOR TRANSPLANTING TREES.

[ABSTRACT OF CORRESPONDENCE.]

DR. MCVICKAR, of Milwaukee—Thinks one year old Dwarf Pears the best age to transplant; standard pears and apples, would prefer two or three years old. His practice however, does not accord with his theory; finds as he grows older, he becomes more impatient for results; his planting is now chiefly of Dwarf Pears, and these he procures of large bearing size; he is willing to take the necessary pains to insure success.

J. A. CARPENTER, Waukesha—Prefers two year old trees; formerly planted older and larger trees, but finds two years old to be the best, for these reasons: they cost less, usually have more roots in proportion to tops, can be handled and planted with much less labor, and are more sure to live; does not expect to lose a tree which reaches him in good condition.

D. MATTHEWS, Burlington—Prefers thrifty two or three year old trees to those which are older; part of orchard was planted in the spring, and part in the fall; all did equally well.

C. GIFFORD, Milwaukee—If planting with reference to forming trees of best shape, should take pears at one year from bud, and apples at two years; if in haste to see fruit on trees, should select pears at four to six years old. For an apple orchard, would not accept trees over three years old.

A. VAN VLECK, Waukesha—Would chose thrifty two year old trees; finds them safest and best.

A. G. HANFORD, Waukesha—Apple trees two or three years old are better than older; all things being equal, the two year old tree will bear fruit as soon as the five year old, besides

making a better formed and healthier tree. Pear, plum, and cherry should not be more than two years old; large trees suffer more by removal; they are more difficult to pack and transport, besides costing more for handling and carriage; the risk is also very much increased. European gardeners always select maiden trees as the preferable size for removing; of course such trees should be cultivated as farmers do corn.

T. C. Dousman, Ottawa—Selects trees of small size, with low heads, such as others usually reject; prepares the ground very thoroughly; last spring made an experiment in close planting; set four hundred trees twelve feet each way, occupying one acre; cultivated without other crops, by passing a two-horse cultivator through twice, five different times, occupying ten hours for the season; expects a large profit from this acre.

J. Patterson, Waukesha—Six years ago purchased four large apple trees, thinking to have fruit soon; removed with great care, with ball of earth, on a cart, each tree making a load; at same time purchased a dozen trees three years old, which carried from the nursery in my arms; the small trees have outgrown the large ones, besides have produced the most fruit, and are now much the best; all received alike good cultivation.

ERRATA.

Page 18, line 3d, read *Ex*-Presidents instead of "Vice-Presidents."
" 86, first line under cut, read *Allen's* patent.
" 393, line 16, for "tammarack" put *tamarack.*
" 397, line 15, for "pith" put *with.*
" 418, line 29, for "Meliotus" put *Melilotus.*
" 423, line 35, for "Cyllindrothecium," put *Cylindrotheceum*
" 423, line 40, for "trignetrum," put *triquetrum.*
" 423, line 45, for "delplanatmn," put *deplanatum.*
" 424, line 13, for "Ttichocolea," put *Trichocolea.*
" 522, first line, for "winters of 1857-8," put *winter of* 1856 7